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Addresses

THE DISTRIBUTION OF AFFERENT NERVES IN THE SKIN.*

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While the question as to how the ventral roots of the spinal nerves are engaged in the innervation of the muscles is in its main features cleared up, especially through the researches of Sherrington,[1] our insight into the distribution of the afferent fibers is still very incomplete. Here again the work of Sherrington represents by far the most important contribution, his experiments being the more interesting because of their having been made mostly on monkeys.

Sherrington[2] determined the extent of the cutaneous areas of the dorsal roots of all the spinal nerves and found that these areas are always continuous for each single root and that they overlap to a considerable extent. His method of observation was that of remaining anesthesia, as Head has termed it. The skin field of a spinal root is isolated by dividing as many adjacent roots as is necessary to surround the skin field in question by a totally anesthetic zone. By pinching the skin and watching the reflexes thus called into action the borders were defined.

This way of proceeding neglects the functional differences of the afferent fibers, and its results are, therefore, applicable to the sensory disturbances in man only with certain restrictions. Sherrington[3] tried to make up for this deficiency by a series of experiments on tame monkeys, cutting one or more of the dorsal roots and examining the field, thus rendered anesthetic or hypesthetic, with a variety of stimuli. He generally found the heat-sensitivity and the pain-sensitivity more impaired than the tactual sensitivity, which means that "the pain-field and the heat-field of a single sensory spinal root, at least in the case of certain spinal nerves, are less extensive than is the touch-field of the same root." He recognizes that the problem is but imperfectly accessible by researches on animals and awaits fuller information from the study of clinical cases.

In dealing with sensory disturbance in man after injury to cutaneous nerves, the first thing to be considered is what kind of sensations belong to the normal skin and to the underlying tissues. The subject has been treated by a large number of physiologic and psychologic investigations, and I propose, so far as I am able, to draw a short sketch of their issue.

Most physiologists agree that the sensory functions of the skin are based on four fundamental qualities mediating the sensations of warmth, cold, touch and pain. Careful investigations have placed it beyond doubt that corresponding to these functions the nerve-supply to the skin must be a fourfold one. Blix was the first to note that the sensibility of the skin to warmth, cold and touch varies widely within a given area, provided the stimuli act on a very small part of it. He ascribed this fact to the existence within the skin of terminal organs of specific function, and he regarded the most irritable points as their projection on the surface. Goldscheider has confirmed and amplified the conclusions arrived at by Blix, but was often misled in his observations by not using quantitative methods. Later I was able to show that the spots most sensitive to touch had a peculiar relationship to the hairs, lying always on the windward side of the hair and covering its root or sheath.[4]

The position of these touch-spots once ascertained, it is easy to prove that they react in a specific way to various kinds of stimuli. In using, for instance, the head of a pin as an electrode, the touch-spots respond to an alternating current of minimal strength by a vibrating sensation very similar to that evoked by a tuning fork brought in contact with the skin. In the spaces between the touch-spots no such sensation is provoked, but the same current or even a weaker one is felt as a non-vibrating, permanently painful prick.

We have, then, two different sensations evoked by the same minimal stimulus, and it depends on the place where the stimulus is applied as to which one is produced. The most probable explanation of this fact is that the effect depends on the kind of terminal organ excited by the stimulus. The one reacts quickly enough to transmit separately the rapid alternations of the current; the other, too slow to do so, is kept by them in a condition of constant irritation. In what part of the nervous system this difference of reaction is seated, whether in the nerve fibers, in the terminal organs, in certain central parts or, as seems not improbable, in all three of them, can not be decided at present. But it is clear that the nervous impulses belonging to the two sensations must be transmitted to the brain by different paths, a conclusion which quite agrees with clinical observation.

As regards the temperature sensations, similar circumstances prevail. If the skin is examined with bits of wire, kept at temperatures a few degrees above or below the temperature of the skin, it is easy to map out a large number of cold-spots and a more restricted number of warm-spots. They represent minute, but unchanging areas on the skin, in which the sensation cold or warm is aroused by a minimal stimulus, that is to say, by a stimulus not felt in the intermediate spaces.

In applying thermal irritants to these points generally only one kind responds. If the temperature of

* Address before the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Jour. of Physiology, 13, 621, 1892.
2. Phil. Trans., 1893, 184, B. 641; 1898, 190, B. 45.
3. Jour. of Physio., 27, 390, 1902.
4. Abtr. Ges. d. Wiss., Leipzig, 1896, 23, 175.

the skin is lowered the cold-spots are stimulated; if it is raised the warm-spots come into play. It is impossible to give definite temperatures as liminal values, since the physiologic zero point changes, not only as regards time, but also in different parts of the skin, as, for instance, in passing from the volar side of the hand to the dorsal one, or from the covered parts to the uncovered ones and so on. Some stimuli act on both the warm and the cold-spots. Mechanical and electrical irritations have this power and under certain circumstances thermal irritation also. With temperatures between 45° and 50° C. one is generally sure to stimulate not only the warm-spots, but also the cold-spots, evoking from the latter a sensation of cold, which I have termed the paradoxical cold sensation. It is, therefore, quite possible that one and the same stimulus is felt both as warm and cold. This can be conveniently shown in the following way: By means of a small lens the sunlight is concentrated on a part of the skin where the warm and cold-spots have been determined beforehand. By bringing the focus to a warm-spot the sensation of warmth is produced, on a cold-spot the sensation of cold. In the intermediate spaces the concentrated light is either felt as painful or is not felt at all, according to its intensity. The touch-spots never respond, being not accessible to any kind of thermal stimulus. The experiment shows in a very striking manner the specific nature of the afferent nerve-fibers of the skin.

From this and other observations the conclusion may safely be drawn that the nerve-supply to the skin is a fourfold one. To use a rather schematic but illustrative expression, it can be said that the surface of the skin is divided into a very large number of minute areas or patches, each of which represents the field of distribution of the nerve fibers belonging to one or other of the above named four qualities. According to a rough estimate, there are on the skin of the trunk and limbs about 30,000 warm-spots, 250,000 cold-spots and half a million of touch-spots. As to pain, reliable determinations are wanting. It is easy to prove that the sensibility to a painful stimulus passed across the skin varies considerably from place to place, but it is difficult to mark out with the same exactness as can be done for the three other sensations, spots of maximal sensibility. The reasons for this deficiency are manifold, one being, no doubt, the richness of the skin in nerve fibers of this sort.

I have often been told that common experience contradicts the conception of the nervous supply of the skin as here sketched, in that a warm, a cold, a blunt or a sharp object passed over the skin is everywhere recognized in its proper qualities, and that the sensation seems a continuous one throughout. In granting that the afferent nerves are nowhere mingled into a homogeneous or uniform layer and that the surface of the skin is, so to speak, checkered by a variety of terminal organs, the expectation is naturally raised that an object moving over the skin ought to provoke a sensation varying in quality and changing in intensity. I have given already a few instances which prove that this expectation is by no means an erroneous one. If the moving object is of very small size and its stimulating power not far above the threshold value, the sensation is in very fact a discontinuous one, varying generally both in intensity and quality. Besides there are to be found in every normal skin regions where one or two of the typical sensations are wanting, where cold is felt but not warmth, pain but not touch, and *vice versa*.

Still, the objection just raised holds good under the usual circumstances and must be somehow accounted for. I think the explanation lies in a peculiarity, belonging to all sensory organs, which for the sake of convenience I shall term the irradiation of stimuli. There are two kinds of irradiation, a physical and a physiologic.

Physical irradiation consists in the spreading of the irritation over a larger number of terminal organs than the nature of the stimulus itself would seem to demand. This spreading is caused by certain physical qualities of the tissues or parts conducting the stimulus to the terminal organs, as, for instance, by the imperfections of the dioptric apparatus in the eye, by the diffusion in the saliva of the substances affecting taste, etc. In the skin, thermal differences and mechanical deformation are apt to spread to a considerable extent, with the effect that, unless special precautions are employed, nearly every stimulus is sure to irritate more than one terminal organ. This circumstance explains the difficulty or inexpediency of mapping out touch-spots or temperature-spots over such parts as possess a thick epidermal layer, as the volar side of the hand, the sole of the foot, etc.

Of far greater importance is the phenomenon to which I have alluded as physiologic irradiation. The points of a pair of compasses set on the skin are not discriminated as separate if the distance is reduced to a certain liminal value, which differs widely in various parts of the skin. This fact was recognized by E. H. Weber, who used it as a means to measure the acuteness of local discrimination. His conception was that the liminal distance had an anatomic bearing in that it depended on the distribution and ramification of nerves in the skin. This view had to be abandoned after several investigators had found that the liminal distance could be much reduced in applying the two stimuli not simultaneously but successively. In using this device and choosing a suitable time-interval between the two stimuli, I was able to show that any two neighboring touch-points may be discerned, though it is not possible under these circumstances to judge their relative position.[5]

The enormous differences between the liminal distances found in simultaneous and successive stimulation can not be explained on an anatomic basis, but point to a difference in the spreading of the irritation, being evidently facilitated by simultaneous stimulation. This is proved, moreover, by the fact that simultaneous irritation of two neighboring touch-points is always felt more strongly than that of a single one, which means that the two irritations are added, one to another, as is the case with stimuli successively applied to the same terminal organ. It is, therefore, right to say that the localization of a given stimulus and the intensity with which it is felt depends not only on the physical properties of the stimulus and on the number and quality of the terminal organs engaged, but also on the conditions existing in the central nervous system.

I wish to lay special stress on this point, since it helps to clear up some very interesting observations recently recorded by Dr. Head.[6] In order to study the consequences of nerve injury more accurately than was possible on the patients of the London Hospital, he submitted himself to a very heroic and at the same time very valuable experiment. In April, 1903, the external

5. Würzburger Litzungsbor, 1899 and 1902.
6. Head, H.: The Afferent Nervous System from a New Aspect, Brain, 1906, vol. 11, p. 99.

and radial cutaneous nerves of his left forearm were divided in the neighborhood of the elbow, and after small portions had been excised the ends were united by silk sutures.

Dr. Head describes the consequences of the operation in the following way: "It produced loss of all forms of cutaneous sensibility over an extensive area on the radial half of the forearm and back of the hand. Stimulation with cotton-wool, the prick of a pin, the application of all forms of heat and cold, were unappreciated, and the two points of the compasses could not be discriminated, even when separated to the furthest extent possible. But if this part was touched with the point of a pencil, the head of a pin, or even with the ball of the finger, the stimulus was at once appreciated and the point of application localized with remarkable accuracy" (p. 102). "When the hairs were pulled, the elevation of the skin produced no effect on the consciousness. Pressure, which previously caused a sensation, was no longer appreciated when applied to the skin lifted from the subcutaneous structures to form a ridge. All sense of form or size was lost" (p. 103).

For a long time past neurologists have maintained the view that in speaking of the perception of pressure a distinction must be drawn between light pressure or touch and strong pressure or, as Strümpell more appropriately calls it, deep pressure. The perception of light pressure, of form and of size, is due to the skin, thanks to the sensibility of the touch-points and their highly developed discriminating and localizing power. The corresponding terminal organs are ring-like arrangements of non-medullated nerve-fibers encircling the hair follicles and, in the hairless parts of the skin, the corpuscles of Meissner.

The perception of deep pressure is much less accessible to investigation, because, under normal conditions, it is hidden by the superior sensibility of the skin. But it is known from clinical cases, particularly of syringomyelia, that the sensibility of the skin may be impaired or even lost, while the perception of deep pressure is apparently unaltered. So far as I am aware a minute examination of the state of sensibility in such cases has never been made. Undoubtedly a certain amount of localization remains and there is no ataxia in executing spontaneous movements, a disturbance never wanting when deep sensibility is lost. As to the terminal organs that are responsible for this kind of sensibility, Sherrington has rendered it very probable that they are to be looked for in the so-called "muscle-spindles." According to him, from one-third to one-half of the medullated fibers of the muscular nerve trunks consist of small-sized fibers connecting the spindles with the spinal ganglia.[7] There are, besides, terminal organs called corpuscles of Pacini and Golgi-Mazzoni to be found in the fibrous membranes, in tendons and joints. Head's experiment may be regarded as a crucial test, establishing the correctness of the above views.

A fact which puzzled Dr. Head very much he describes in the following way: "Over the radial half of the dorsum of the wrist a triangular area of skin became entirely insensitive to prick in consequence of the operation. But this same area remained sensitive to touches with cotton-wool and also, in a limited degree, to warmth. The area was capable of appreciating temperatures between 36 and 45° C. It was, however, entirely insensitive to temperatures of 50° C. and above."

If this description is to be taken literally it is difficult to understand, and, I think, very improbable. I venture to suggest the following interpretation: Temperatures of 50° were felt neither hot nor burning, but simply warm, just like the lower temperatures. If my conjecture is right, the observation can be easily explained by certain peculiarities of the temperature-sensations familiar to physiologists.

I have already spoken of the so-called paradoxical sensation of cold brought about by irritating the cold-spots with temperatures of 45° and higher ones. If the temperature of the normal skin is slowly raised over the physiologic zero-point, first the warm spots alone are irritated and the sensations lukewarm or warm evoked, according to the intensity of the stimulus. When the temperature reaches 45° the sensation changes in a peculiar way owing to the fact that the cold-spots join in the irritation, mingling their specific sensation with the warm one. Alrutz has proposed to reserve the term "hot" exclusively for this combination, and I gladly accept his suggestion. If the temperature is raised still higher pain is evoked, and the sensation assumes a burning character.

Now, if some part of the skin has lost the sensations of cold and pain, it is to be expected that all temperatures above the physiologic zero-point will be felt simply as warm, and that the sensations hot and burning will be absent. The possibility remains that the higher temperatures will not be felt at all, since it is a well-known fact that temperature-spots tire very quickly.

Another curious observation was made by Dr. Head during a certain period of recovery. From about the fiftieth day after the operation, sensibility of the skin slowly began to return, the sensation of prick appearing first, soon being followed by temperature sensations, but a year elapsed before light touch could again be felt. The temperature sensations were at first very imperfect. To irritate the cold-spots, which reappeared in small number, rather low temperatures were needed and conversely relatively high temperatures for the warm-spots. But whenever the spots reacted the sensations were strong and widespread, their localization indefinite and often erroneous. Similar phenomena could be observed when painful stimuli were applied.

I quite agree with Dr. Head in attributing to these observations a considerable importance, but I can not see them in the same light as he sees them. He thinks that these imperfect sensations of cold, warmth and pain are brought about by a special system of nerves, which he calls "protopathic." These nerves regenerate, according to him, more quickly than the "epicritic" ones, their threshold value is high, their sensations strong and varying little in intensity, the localization very indefinite, etc.

I may be now allowed to recall what I have said regarding the perception of intensity and locality of a stimulus. I pointed out that in producing these perceptions certain qualities of the central nervous system, such as summation, irradiation and others, play an important rôle. If a cutaneous nerve is severed, the atrophy of its distal end, of its terminal organs and probably of the skin is not the sole effect, but there occur at the same time marked changes in the corresponding spinal ganglia and their posterior roots. In a very elaborate research George Koester, of Leipzig, has shown[8] that the cells of the ganglia first swell and then shrink and that they remain for months in an altered condition. 'Simi-

7. Jour. of Physiol., 17, 211, 1895.

8. Koester, Gg.: Zur Physiologie der Spinalganglien, Leipzig, 1904.

lar changes take place in the posterior roots. According to H. K. Anderson,[9] section of the sciatica nerve in young animals checks the development of the corresponding ganglia and posterior roots and of the cells in Clarke's column of the same side.

These observations furnish ample proof that at the time of incipient recovery the central connections of the cut nerve are not in normal condition, which makes it probable that their function also is altered. If we assume, for instance, that through the degeneration process the connections of neurons are loosened, it seems quite likely that after the operation stronger stimuli are needed to evoke sensations than under normal conditions, and that the irritation once established is little changeable as regards intensity and irradiation, which means that summation and localization are very imperfect. The assumption is the more probable since it is known that certain drugs act in a similar way. I believe, therefore, that the many interesting points brought forward by Dr. Head can be accounted for by reference to certain well-established physiologic and pharmacologic data. It seems, therefore, at least for the present, not necessary to introduce a hypothesis to which existing physiologic and psychologic data do not lend support.

I am quite aware that the explanation that I propose, like his, is more or less a hypothetical one. Still it has the advantage, as I believe, of being consistent with all the observations as yet known. Of course, every hypothesis is by itself transient and has to be changed as experience grows. That is the reason why I have wished to bring the matter before you, hoping that your experience will show me how far my conclusions are right and where I have missed the point. I am quite convinced that physiology alone, unaided by clinical observation, would be very slow in unraveling the mysterious functions of the nervous system.

DISCUSSION.

DR. L. F. BARKER, Baltimore, said that the Section was to be congratulated on having had the opportunity of hearing Professor von Frey give the results of his investigations. In 1895 it was his privilege to meet him for the first time and to have him demonstrate the method for distinguishing these four cutaneous senses, touch, pain, cold and warmth. It so happened that Dr. Barker had in his arm an area of elective anesthesia, due apparently to a cervical rib. In this area he felt pain sensations, but no cold, no warmth, and no touch. It interested him especially because he had an opportunity to study pure pain sensations unmixed with any other. At Professor von Frey's suggestion he studied this area and the adjacent skin for some six months under his direction. It was illuminating to see how his delicate methods permit the demonstration of the various sense points. The fact that he experienced pain sensations free from the other sensations in the area mentioned speaks strongly in favor of von Frey's view of independent pain nerves. The pain points are so close together in the normal skin, and are so difficult to stimulate without stimulating sensory points of other modalities, especially touch points, that many have found difficulty in convincing themselves of the accuracy of von Frey's observations. After becoming acquainted with pure pain sense it was easily possible for him to localize both touch points and pain points, and to distinguish them sharply from one another in normal skin. Of the many names connected with the physiology of cutaneous sense those of E. H. Weber, M. Blix, and Max von Frey are the most important.

DR. S. J. MELTZER, New York City, said that there was no pain from heat; he could not say as to cold. His observations were made under local anesthesia. In one case in which magnesium sulphate was used, an operation was performed and the patient did not know he had suffered any pain. He had also had experience in the use of cocain. When this is used the sense of touch is present although the sense of pain may be absent.

DR. S. I. FRANZ, Waverley, Mass., said he would like to ask Professor von Frey to explain from his point of view the results of the temperature tests made by Head and Sherren. Most of Head's subjects showed a loss of ability to appreciate medium temperatures, but a retention of sensation of the extremes, but Head also describes at least one case in which the extremes were not felt although the medium temperatures were properly appreciated. The first of these conditions may be explained as due to differences in threshold values, but when coupled with the second it suggests very strongly the probability of two different sensory mechanisms, one for moderate and one for the extreme temperatures—in addition, perhaps, to the "heat" and "cold" end organs and conducting nerves, which Professor von Frey has so ably demonstrated.

PROF. MAX VON FREY said he agreed entirely with Professor Barker in the view that different kinds of painful sensations exist. They could all realize that from cutting they suffered a different sensation from that resulting from strain of a joint. Pain may arise in nearly all of the tissues, while cold, warmth and touch are limited to the skin and mucous membranes. He called attention to the important work of Professor Tullenberg, who had shown that by high temperatures two heat sensations are produced, one a superficial and the other a deep one. Of course this had nothing to do with the assumption of Dr. Head, who assumes that the skin is supplied with two sets of nerves. Professor von Frey thought it important to investigate the different effects of poisons on the sensations; of cocain on the eye, for instance. The eye is very good for the carrying on of certain experiments. In using cocain he came to the conclusion that there was a difference in the lapse of time in the disappearance of the sensations of cold, warmth and pain. He was unable to make very extensive investigations. As to the remarks of Dr. Franz he thought he had shown that the differences which Dr. Head has observed are in the main due to differences in the temperature. He had to apply higher temperatures usually. Of course they would have to wait for a final paper by Dr. Head, but it seemed unnecessary to hold to the conclusion that there are two sets of nerves.

There was another experiment which was very startling in its results when done for the first time. It consists of putting a part of the finger or hand into mercury, which of course puts it under a high pressure, and this is not felt. Why is this possible? A very light touch will arouse the sensation of touch, while this will not. Professor von Frey found this to be due to a peculiarity of the touch nerves.

9. Jour. of Physiol., 28, 499, 1902.

A SUMMARY OF THE THERAPEUTIC FIELD FOR THE PAST YEAR.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMACOLOGY AND THERAPEUTICS AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

THOMAS F. REILLY, M.D.
NEW YORK CITY.

Custom and the by-laws of the Association have ordained that your chairman shall outline the progress and advance in pharmacology and therapeutics during the year. To mention all of the advances in therapeutics in the past year would require a résumé of the progress made in the cure of disease in all the departments of medicine. The scope of this Section really embraces the whole art of curing disease and everything of a therapeutic nature is an open field for our discussion. I shall take up only those therapeutic measures that directly interest the general practitioner.

GENERAL REVIEW.

The number of useful remedies introduced during the past year has been very few. It is true that the usual horde of organics and synthetics made in Germany have come, though with somewhat abated vigor, but thus far few have been of any signal service. Doubtless a potent cause of the failure of the new agents to attract attention is due to the fact that experimenters, reputable and otherwise, are now more chary in extolling the imaginary advantages of a new agent than they were before the crusade of the past year.

Better appliances and more experience are responsible for the increasing use of ethyl chlorid as an introductory anesthesia, preparatory to administering ether. For this purpose it is rapidly replacing the more cumbrous nitrous acid and is apparently quite as safe. The great claims set forth as to the value of scopolamin-morphin anesthesia have, in a measure, fallen to the ground. At one time proposed as a general anesthetic and now used as a preparative sedative to ether anesthesia, it is but slightly superior to morphin and atropin. For many years morphin and atropin have been used for the purpose of quieting patients before anesthesia, and for this purpose scopolamin and morphin have scarcely any other advantages. The lack of excitation is more than counterbalanced by the after depression. Chemically, it is the same as atropin and the Phamacopeia regards it as an equivalent. Like the Greeks, we are always running after the old gods with the new names.

The treatment of syphilis by hypodermic injections of soluble salts of mercury has, during the past year, received a great impetus, by reason of the almost unanimous advocacy of this measure by the eminent syphilographers who have written on the subject. It is safe to say that the treatment of syphilis by inunctions will soon be a thing of the past. In Germany the intravenous use of some of the preparations of digitalis has achieved decided recognition; in this country nothing has been done in this line as yet.

No new organic silver salt of any consequence has been launched within the past year. Sober second thought is gradually convincing us how seldom it is possible to "shoot" the virulent germs and the number of successful results reported from the use of organic antiseptics has materially diminished.

A few new cocain substitutes are now before the profession awaiting trial. Personal observation leads me to believe that their seeming advantages are more than counterbalanced by other disadvantages.

Little has been heard during the year of the use of large doses of creosote and its derivatives in the treatment of pneumonia. Doubtless, it is still employed to a large extent for this purpose, but except for its effect on an accompanying bronchitis, the impression is gaining ground that it is not of any distinct service. From the Southwest, where, apparently, pneumonias are of a milder type than ours, comes a second champion who lauds massive doses of quinin and chlorid of iron as a specific in the treatment of this disease. It may be said to be still on trial, but certainly we in the East can not get the good results that its sponsor says he achieves in the Southwest.

In the large metropolitan hospitals there is a feeling of therapeutic nihilism as to the medicinal treatment of pneumonia, and in the vast majority of cases the treatment is expectant in character. It is safe to say that strychnin is the only agent used with any constancy. The mortality rate of from 20 to 40 per cent. certainly should be modified by judicious medication. The tendency to secure medicinal agents from animals rather than from the plant kingdom, has increased during the past year. The use of Moebius serum of thyroidectomized sheep has been established as a measure of practical value in the treatment of exophthalmic goiter. The serum of Beebe and Rogers, although differing very much from that of Moebius, promises well. The Italians have been very active in this line of work and many favorable observations have been made by them in the treatment of leukemia and anemia and other blood diseases with various sera.

There has been little added to our knowledge of the therapeutic value of the suprarenal glands; on the other hand from several sources a note of warning has come as to the use of subcutaneous injections of its various preparations. In not a few instances sloughing has followed its use. The continued use of the active principle of this gland in animals has unquestionably induced degeneration of the walls of the arteries. This is a point to be kept in mind when this agent is frequently employed in human beings.

The number of the diseases beneficially affected by the Roentgen ray therapy has not received any material increase; on the other hand the field of usefulness formerly claimed for it has been much restricted.

During the year the tendency to use large doses of antitoxin in diphtheria has become more manifest. A most important advance in this connection is the confirmation of the value of antitoxin in postdiphtheritic paralysis, even though the patient has already received antitoxin. The intravenous use of this agent does not seem to have found favor, although there are cases in which it is worthy of trial. The diphtheria antitoxin has been used for well nigh all disorders from acute articular rheumatism to cerebrospinal fever and competent observers have reported good results from its use in most of them. Whatever good effects that may have followed its use were due to an inherent immunity possessed by the horse before the diphtheria toxin was administered. Later observations do not warrant any hope from its use in cerebrospinal fever. As a prophylactic agent antitetanic serum may be regarded as a specific. In up-to-date hospitals its use in all cases of punctured wounds has become a routine practice. This is especially the case with blank cartridge wounds, and the number of cases of tetanus have markedly diminished. When the disease has begun the injections of the serum into the motor nerves, spinal canal and brain, offer the only hope. For a long time the use of the antistreptococcus has been regarded in the light of an experiment. There is reason to believe that the use of polyvalent sera has been followed by marked results. The field of usefulness is much like that of antitetanic serum, in that it acts better as a prophylactic in suspicious cases than as a curative agent after the establishment of the serum disease.

No confirmation of Behring's antituberele era has been reported. Hoffa, of Berlin, in the *Revue de Thérapeutique* speaks very encouragingly of the use of Marmorek's antitubercular serum in cases of bone and joint tuberculosis. He reports a series of thirty cases wherein the use *per rectum* of large doses of this serum has been followed by unmistakably good results.

On many occasions the word has gone forth from this Section that a more systematic study of our native plants would enormously enrich our medical armamentarium. If one-half of the energy that is daily put forth

to discover some new coal tar product were employed to test our native plants and to extract their active principles, I am sure far more permanent results would be obtained. Why should there not be other plants growing about us, that will do for other organs what digitalis does for the heart and what quinin does for malaria? Coal tar derivatives have never cured disease. In every case their effects are but temporary. The reason of this present skepticism of the profession toward our native materia medica, is doubtless due, in a measure, to the senseless claims made by earlier inexperienced and too often uneducated physicians and laymen, claims which were found to be preposterous. If it were found that the agent did not benefit the disease as it was claimed to do, it rapidly fell into oblivion. This is not the method of the ultrascientific staff pushing a new coal tar derivative. They keep on trying it for everything and finally it may become a well recognized agent, useful for an entirely different affection from that which its originators intended.

THE PHARMACOPEIA.

The past year has witnessed the launching of a number of pharmacopeias. Those of European countries, as well as our own, have in the main, adopted the principles laid down in 1902 by the Brussels Conference. This has resulted in a uniform standard of strength and character for most medicinal agents throughout the civilized world. In this country hitherto, the appearance of a new edition of the Pharmacopeia has excited little notice on the part of the profession. A few college professors felt obliged to keep abreast of its teachings, but the general body of the profession had come to view it as being essentially a druggist's book. This year the condition is vastly different. The few changes that have been made in the strength of some of the well-known drugs have attracted the attention of the rank and file of the profession and there is a constant demand for instruction on the rules, changes and suggestions contained in the new work. Probably the most far-reaching result of the new edition is the establishment of the so-called purity rubric, whereby all articles which bear such a standard are restricted in their absolute purity without necessarily criticising minutely as to what the fraction of a per cent. claims to be. Such rubric gives all of the courts of our country a standard which they have long plead for to base their findings on and lends more protection to the public than a casual observer can realize. It is now believed that more frequent revisions of the pharmacopeia are necessary and it seems to me that the time has come when the American Medical Association should take a hand in this work. With our Council on Pharmacy and Chemistry, with a laboratory force, and with a journal as a mouthpiece of the entire profession, we are better equipped for the work of revision than any body which could possibly be selected as the Pharmacopeial Conventions have been in the past. Far from having any intention to impugn the work of the committee on revision, than which a better never existed, it is my belief that if the medical staff of the committee were selected by this Association and the pharmaceutical and chemical staffs by the national chemical and pharmaceutical associations, the revision would more nearly be an expression of current medical usage. As it is many agents have been retained that are not in general use, while others much used have been omitted. A national organization is eminently fitted to find out such facts and to give the book a national character.

THE CAMPAIGN AGAINST NOSTRUMS.

Of all advances in therapeutics during the year, none is more noteworthy, none will be more lasting to the whole art of therapeutics, than the war against nostrums and semi-secret preparations. It is safe to say that the campaign which has been waged by THE JOURNAL of this Association for the past two years and by various lay periodicals during the past year, has made thousands of physicians turn to the writing of pharmacopeial prescriptions rather than prescribing some confessedly secret prescription or proprietary, which often amounts to the same thing. This is distinctly a therapeutic advance and as it is potential for further growth it is all the more commendable. Many of the waves of moral upheaval which have characterized the past year in the different spheres, will doubtless recede as they have done before, but with this matter there can be no backsliding. The establishing of the Council on Pharmacy and Chemistry marks a pillar which as a permanent institution will always hold a beacon light to show the difference between the true and the false. Next to THE JOURNAL, it is the most valuable asset of the organization, and it is hoped that its work will be brought to the door of every practitioner of this country free of cost, whether he be a member of the organization or not.

WHY PROPRIETARIES ARE POPULAR.

It is not my intention to discuss the ethical and nonethical proprietaries; others have done that more exhaustively than we have time to do here. It seems to me that the chief reason for the use of the proprietaries is not that they contain any wonderful medicinal agent or combination of agents, but that they do present disagreeable tasting medicines of more or less value in a palatable form. We may say that it is a small matter, that the relief of distress and the cure of disease are our chief objects, but the present generation is a generation of sensitive stomachs and sensitive nervous systems, and the small things such as a disagreeable potion are to them a major affair and in many instances cause more discomfort than the disease, hence the vogue of homeopathy among the well-to-do. For instance, scarcely any one really believes that the modern organic iron preparations are intrinsically better than the old pharmacopeial inorganic salts, but it is the general belief founded on experience that, as furnished by the manufacturers, they do not disturb the stomach and are not repellent to the taste. I might mention many other similar instances. This brings the matter squarely up to the medical schools as far as the next classes of graduates are concerned. For those in practice it is no new advice to tell them to study pleasant combinations. By asking the advice of competent druggists many improvements in the routine prescriptions can be suggested. This must be a matter of individual education.

In some instances it seems that it might be a good plan to fill in the active ingredients of the prescription, quantity and dosage, and then to state that the druggist can use his own skill in making it palatable by the addition of flavors, etc. Such additions should then be incorporated in the prescription. In this way the druggist will take some pride in filling prescriptions and the more skillful he becomes the more patronage he will receive and thus he will be compensated.

THE DRUGGIST AND THE PHYSICIAN.

Another plan for educating the profession individually is that pursued by the druggists' association in several parts of the country. Circulars explaining the

palatable prescriptions of the Pharmacopeia and of the National Formulary are sent monthly to all physicians in the neighborhood. The profession has generally been skeptical as to the ability of the retail druggist to make elegant and palatable preparations, and this notion has been fostered by the various proprietary agents. This was all too true of the slovenly druggist of a decade ago. To overcome this prejudice some of these up-to-date druggist associations before mentioned have followed the example of the detail men of the proprietary firms and are sending neighboring physicians small samples of the pharmacopeial articles as dispensed by them. These are in every instance the equal in quality, taste and appearance of any similar proprietary. Many physicians may not relish such instruction offered by the pharmacist, but it is a thousand per cent. superior to that dispensed by the average detail man. In a number of cities joint meetings of the local druggists and physicians have taken place and as a result a better feeling has been engendered.

This Section forms a link, as it were, between the druggist and the physician, and we hope in the future that closer relations may be maintained with the national pharmaceutical society. Plato's dictum that great questions are only to be decided by compromise holds good for this matter of the proprietaries. Some features of the proprietary trade must remain; others must go. Out of the present clash of interests and theories certain well-defined principles will be evolved that will form a basis for a newer science of therapeutics.

Original Articles

HEALTH INSPECTION AS APPLIED TO THE INDIVIDUAL.*

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The care of the health, when it comes to a discussion of its restoration when it has been lost, is a very old topic. Health inspection, as a wholesale proposition, as applied to communities, states and countries marks in its development perhaps the greatest advance in the application of science to human welfare. As applied to the individual, it still lags far behind what it ought to be.

Hundreds of lives are lost every year, and thousands of days of disability incurred because it is not the custom for the health of the individual to be the subject of inspection in such a manner as to detect and remedy disease in its beginning.

The life insurance examination which, of course, is only applied to relatively few individuals, reveals a surprisingly large amount of unsuspected disease.

Every individual should be thoroughly inspected from time to time by a physician applying the resources of a complete physical examination, with chemical and microscopic observation of all obtainable secretions, in order to ascertain the standard of health of the individual.

No one would think of running a complicated machine without an annual inspection and overhauling of those slight defects which, if neglected, lead to a serious breakdown.

Each generation as it advances through decades considers itself an exception to the one that preceded, and no one accepts the penalty of advancing age until it is thrust on him. The laboratory would inevitably reveal the necessity for attention to diet years before incurable physical penalties had been uncured.

Such an examination to be of value must be very technical in its nature.

Patients naturally seek the physician for disordered conditions that are sufficiently obvious to attract their attention.

The observations necessary to determine the standard of health of the individual in the absence of evident disease are so technical, consume so much time, and require so much manual dexterity, that the examinations themselves must usually be made by young physicians whose attention can be devoted chiefly to these things. But the young physician is unable to judge of the relative importance of the very technical details which he is specially capable of discovering. For this reason, the general practitioner, or as he has come to be called, in these days, the private practitioner, should have his practice so organized as to obtain the assistance of younger men who have fresh skill and enthusiasm with regard to the technicalities of physiologic observation. Comparatively few men have reached the point of such an organization for themselves alone. Some of us have brought this about by the establishment of a coöperative clinical laboratory, where the younger men who are fresh in all the technicalities of chemical and microscopic research do the work of older men, who are in actual practice.

Such a laboratory must be under the direction, more particularly of one man or a committee, but so long as it is purely coöperative in spirit, in that everything is done for the interest of those who come into the arrangement, and so long as the laboratory remains a place where actual practitioners meet to discuss technicalities with the younger men, and the significance of things with their fellows, it will tend to make clinical pathology a practical matter to actual practitioners. It is by means of such an organization that we may arrange our clientèle so that the continuous observation of each individual, while in apparent health may lead to the early detection of disease. The number of people who are willing to submit to this system is, unfortunately, comparatively small, but when its advantages are once clearly understood the number ought to be larger.

The individual must be trained to employ his physician to watch his physiologic processes in the same way as the public has come to expect the medical profession to watch over the health of the community.

Every person should possess a record of his physiologic standards and peculiarities for reference in case of suspected disease.

The united profession can work for the wholesale care of the people, while it is very hard for an individual physician to approach an individual citizen with a proposition for continuous care. This must be brought about by gradual education.

DISCUSSION.

DR. S. A. KNOPF, New York, said that Dr. Bishop had outlined the ideal future life of the average American citizen. He will have his own private family physician: if he can afford to pay for it, all right; if not, the municipality will pay for it. Dr. Knopf commended Dr. Bishop's ideas about the necessity of periodic examination of the average individual, particularly those predisposed to disease. Dr. Knopf said that in the tuberculosis crusade he has emphasized this point particularly in families predisposed to tuberculosis. If we wish to combat tuberculosis as a family disease, in the schools,

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

and in the educational institutions, it is absolutely necessary, he declared, that we should have an entrance examination not only intellectual, but physical, that children should be re-examined at least every six months, or yearly. He said that these suggestions are a little utopian, nevertheless they are ideals; without enthusiasm we can not attain anything.

DR. M. FRIEDRICH, Cleveland, said that one can not even get the examination of the school teacher, a most necessary thing. He can not force an examination, even, of a man who drives a milk wagon, which is absolutely essential. No man who has tuberculosis ought to handle milk. He can not get the examination of the bakers. The man who handles bread ought to be examined. It will take years and years to establish examination of individuals; for as soon as one attempts to examine an individual he will say: "You are encroaching on my personal liberties," and that is just where the shoe pinches.

DR. SENECA EGBERT, Philadelphia, said that while he agrees with Dr. Knopf that Dr. Bishop's proposition is rather utopian at present, he would like to suggest that there are places in this country where it is, in a measure, put in force; namely, in many of our colleges. While the physiologic examinations there are not complete and are largely anthropometrical, they do good by giving the authorities in the colleges a knowledge of each individual entering them whether as freshman or in a later year, and they give the students who enter these colleges a better knowledge of themselves and stimulate their fear, their ambition or whatever it may be, so that they get to work in the gymnasium and improve their condition, as is manifest within the first six months after entering and being examined. In the four years the improvement is remarkable and Dr. Egbert thinks one could say that the average condition of the men who go out from the colleges where such preliminary examination and anthropometrical work is carried on, is far better at the end of the four-year course than that of the men who go out from colleges where such examinations are not made. It also seems to him that here we have the kernel of the right beginning of the movement—that the men and the women who go out from such colleges are the very people who should carry this idea out among the laity and who may be powerful condjutors of the physician who wishes to help this along. It is true that the idea is utopian at the present time and that it will take a long time before we have everybody examined; but when we appreciate that we have to-day three or four thousand people in our colleges who might be good, stanch advocates of such ideas in the future, and when we get down to the fact that sooner or later we must teach in our normal schools these very things and there develop these very ideas, we have the way made clear for a good beginning. We then will begin to be able to have the school teachers examined, after them the pupils, and so in time, he said, a comparatively large portion of the population will come practically within the scope of Dr. Bishop's suggestions.

DR. LOUIS FAUGERES BISHOP, New York, declared that he is a great advocate of keeping young men who are beginning the practice of medicine at all kinds of pathologic and physiologic examinations, and said that these young men are glad to do the work in chemical pathology arising in the practice of old practitioners. He said that only by coöperation with such workers would it be possible to carry out his idea of health inspection.

Function of Pancreas in Metabolism.—Ugo Lombroso has recently published a report of considerable experimental work on this subject. He found that the disturbances caused in dogs by ablation of the pancreas were not modified by introduction of pancreatic juice into the duodenum under conditions closely approximating the normal. This demonstrates, he thinks, that the disturbances can not be the result merely of the lack of the pancreatic juice, but that they must be due to a missing internal secretion of the pancreas. This assumption is favored by the singular persistence of the islands of Langerhans after ligature of the pancreatic duct in rabbits. This persistence suggests that these islands participate in some internal secretion independent of the secretion of pancreatic juice. Lombroso's work is reviewed in the *Gazzetta degli Ospedali*, No. 68, 1906.

SOME TRUTHS ABOUT SLEEP.*

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In the popular mind there must be some mistakes about sleep, so variant and dissimilar are the views as to the need of sleep, the effects of it, and of the lack of it.

One man is sure that for health and strength he needs only four or five hours of sleep out of each day of twenty-four hours, and he quotes numerous people above childhood who have like views and experiences. Another must have eight or nine hours and cannot do with less, and, as all men tend to measure others by the yardstick that fits themselves, he is sure to believe that no one should have less than one-third of his existence spent in sleep.

The medical profession freely teaches this latter view and insists that children especially must have an abundance of sleep or be in peril of nervous and mental bankruptcy. We are told that infants should sleep a large part of the time for safety from calamity to their brains, yet there are instances of infants and small children who have for many months together slept less than four hours in the twenty-four and come out of the experience with vigorous minds and bodies.

INSOMNIA: A WRONG THEORY.

Great numbers of people in our modern life of high nervous tension are victims of insomnia, more now than ever before, and the number is apparently increasing rather rapidly in certain communities. Drugs to produce sleep were never in such demand, were never used so freely, both as a temporary expedient and as a daily habit, as now; and they are sold in vast quantities all over the nervous world, and used according to the whim of the sleepless, more often without than with the advice of physicians. Insomnia is therefore a favorite harvest field of the exploiter of "patent" nostrums, for he well knows that, driven to desperation by sleeplessness, its victim is ready to do anything that promises relief; and if sleep comes as an effect of a drug he is ready to forgive other and perhaps resulting ills, that may in the end be worse than the insomnia.

Possibly some of the sleeping potions may do good by helping to sleep without inflicting any incidental harm to the system, but the evidence is strong and accumulating that most, if not all, of the soporific drugs do harm in some way, especially the coal-tar products and all those that work their effects by obtunding the sensibilities of the nervous system. While their use may be justified by an occasional exigency, they are in the main mischievous because, if for no other reason, they undertake a function and do a thing for the body that good hygiene and a better course of living, as a rule, should make unnecessary.

The testimony of patients with this affliction certainly seems, on the face of it, to confirm their theory of the seriousness of insomnia, for they find that a night without sleep, even if they are in bed and bodily resting, unfits them for the duties of the coming day, and that after a good night, they are fresh and strong. And these data are correct; after a wakeful night these patients are unnerved for the day, and after a night of good sleep they are fit and cheerful. Whether their theory is correct that lack of sleep alone does the mischief is another matter, and there is reason to doubt

* Read before the Association of American Physicians, May 16, 1906.

this conclusion and to suspect, if not to know, that the insomnia is only one of several factors in the problem; one of several co-results of a common and another cause and not itself the sole cause of all the harm.

There can be no question that the victims believe implicitly in the current theory. They easily come to dread a sleepless night; they look forward to such a possibility with nervous apprehension, if not horror, which makes them less likely to sleep; in the throes of wakefulness when they have gone to bed for the purpose of sleeping they become so annoyed as to make sleep hard or impossible to court, and so they lie awake tossing in restlessness and chagrin till morning; and afterwards they look back on the experience with a sense of gloom.

INSOMNIPHOBIA.

It is not unnatural that they should attribute all their bad symptoms to the lack of sleep, for that is the easiest generalization; but it is only half true, if true at all. It is vastly important in this study to keep the horse in front of the cart, for the tendency is great to reverse them. The true story is that the horrors of insomnia are slightly due to want of sleep—very much due to insomniphobia, with which, in some degree, nearly every such patient permits himself unnecessarily and foolishly to become afflicted. His experience is analogous to that of the patient with phthisis who has night sweats. This latter believes, till he is taught otherwise and better, that his bad day is due to the night-sweat preceding it. This is a natural but a most unscientific inference for the patient to make. Really, the bad day and the sweat are co-results of another and a different influence; they are not cause and effect. When the patient learns this truth and that the sweat is not harmful in itself, but a possible benefit by the expulsion of poison, he discovers that it is only a trifling inconvenience, not a calamity, and he bears it with equanimity, if not with pleasure.

The victim of insomnia is equally wrong and equally unfortunate in his reasoning about his case. He honestly believes that loss of the sleep which he thinks his due, is fraught with the certainty of great injury; he laments his infirmity and fears he may become insane, and becomes nearly so by his worry, when if he could and would stop his fretting, he would find that he was hardly hurt at all. The very attitude of his mind when he goes to bed tends to keep him awake, for he is in a state of mental expectancy of insomnia, and the longer slumber is delayed the more demoralized he becomes, the more exalted is his irritation, and the less likely is he to fall asleep. What is worse, he is very unhappy about it and this mood tends still more strongly against slumber.

If he can go to bed and sincerely resolve that he does not wish to sleep, but would rather keep awake all night and perhaps read a book or otherwise try to drive off slumber; if he can bring his mind to this mood, which is one of pleasure at being awake—then he will fall asleep before he knows it and probably so remain the night through. The chief thing is the mood of pleasure, or lacking that, stoical indifference as to whether sleep comes or not; it makes the terror impossible and brings enough sleep in nearly every case—not eight hours it may be, but enough.

REST FOR THE BODY.

There is another truth about this subject that is even more fundamental, and one that is substantially never mentioned by students of it. This is that our theory is wrong that we go to bed and stay there eight or ten hours a day for the chief purpose of sleeping. Sleep, go to sleep, get sleep, sleep is the great restorer, blessed sleep—these are the cries that always ring in our ears, and that have probably in some form rung in the ears of all the recent generations as indicating the drift of thought about sleep. But it is a narrow and a one-sided view. Of course sleep rests the tired brain and lets its cells recuperate from the strain of labor that lowers them, but what of the weal of the tired body whose tissues have been lowered by the work of the day? This consideration has been almost wholly neglected in our scheme of reasoning and the poor body has had to get what benefit it might as an incident of the sleep. On the contrary, we should go to bed to rest the tired body and let sleep come as an incident; rest of the body should be the chief aim; go to bed for that purpose and the sleep will mostly take care of itself. Man can, by his volition, send his body to bed as readily as he can chop his wood, and so his body rests; but sleep comes as a sequence of the conditions of his body, i. e., fatigue, horizontal posture, quietness, silence and darkness to shut out impressions and to incline the brain against thinking; it does not come and never can come by an act of the will, as one rises and walks. The brain puts itself to sleep, so to say, involuntarily as the conditions entice.

The body should probably, with an active life, rest about one-third of the time, and it is not necessary that the brain should be unconscious in sleep all this while. Perhaps no one sleeps too much, but we have had surely an extreme estimate of the amount of sleep which it is indispensable that a rested body should have. This is a most practical truth; and every insomniac who gets himself down to or up to this mental basis begins at once to benefit from it, and he finds that lying awake an hour or two of a night, or before rising in the morning, is not only not harmful, but is not specially unpleasant. Then he is surprised to find his terror gone: he ceases to be an insomniphobiac and becomes a happy philosopher.

CULTIVATION OF A PROPER MENTAL ATTITUDE.

But this mental basis is one of the hardest things in all the experiences of life for the distraught poor sleepers to reach. It is hard for them to change their philosophy of sleep and their habits about it. They have unconsciously and unwittingly come to regard the act of lying in bed awake in the night as a punishment, if not a sin. They are chagrined if they do not drop off to sleep promptly on going to bed; and if they waken before daylight they fret till rising time, or they get up before their rest is over because they are awake. This fuming tendency of the mind is a most interesting study. It is quite as likely to reveal itself about a trifle as about the momentous things of life. A man will be extremely annoyed and impatient because you keep him taking a pill three times a day for weeks, although the pill is sugar-coated, is swallowed easily and produces not a symptom of which the patient is conscious. If it were a sugar-coated bread pill and he did not know this, he would grieve about it as freely. And we are all witnesses of countless lamentations of people because of trifling discharges from their throats and noses of harmless mucus each day. We know and they know that no pain or discomfort comes of it, yet they are in daily terror of the awful consequences they suppose to attend this trifling thing labeled catarrh.

It is hard to unlearn the lessons of a lifetime which

are reinforced by beliefs that are hereditary from a thousand generations of usage, and to see as agreeable the things that have always been considered disagreeable. The sleep problem illustrates this to a high degree. One of the hardest sides of this problem is the contention that much less than the classical eight hours of daily sleep will do. But there are many facts to prove this thesis. People who lie abed long hours reading, sleep correspondingly little, and they live as long and keep as well as the average. It is notorious that many eminent men of history have slept little, and I think hardly one who can be called an intellectual giant has been accustomed to a great amount of sleep.

A CHILD'S EXPERIENCE.

Nor is it necessary that children, even infants, should have as much sleep as we have supposed. Many years ago my eyes were opened by an experience with a wakeful baby. He slept only about three or four hours a day on an average for a year, as shown by the most accurate of records, this wakefulness being due apparently to some nervous predisposition. Quieting drugs were tried, but it was soon found that dangerously large doses would be required materially to increase his sleep; and so, fearing the drugs more than the insomnia, his treatment was confined to good nursing and good nutrition. I fully expected that the child's brain would be permanently harmed by this experience, but nothing of the sort happened. At the end of a year and a half he was sleeping better, and by the end of his second year he was getting as much sleep as the average child of his age, and he was well and vigorous and had a good mind. Then a strange thing happened. He began to sleep more than other children, and by his fifth or sixth year, when he began to go to school, he was sleeping about fourteen hours. By his tenth year he seemed to have paid back to Nature what had been lost and was sleeping like other children of his age. He was perfectly well in mind and body, active and mischievous, and was well abreast of his schoolmates in his studies. One such case is enough to demolish the theory that a child must, that all children must, sleep a great deal or be ruined.

It is a common experience for a man to put off his bedtime till a late hour because he thinks he can not sleep till then; or to walk or work so as to tire his body profoundly before going to bed, in order that he shall be sure to sleep; or to get up at an absurdly early hour in the morning because he has awakened and can not sleep any longer. In all these ways he is wrong, for in them all he follows the wrong theory that we should go to bed chiefly for sleep. We are foolishly terrified by lying in bed awake, in the dark and with nothing to do. We are as bad as children afraid of ghosts. It is an unreasonable and an unreasoning fear, and one that any sensible person should have no difficulty in putting aside if he will only stop to think about it.

The body must be well rested every day, and in the horizontal posture. The erect position that is maintained through nearly all the waking hours makes this indispensable. We are physically handicapped as compared with the four-footed beasts; we need more rest of body than they, and rest horizontal, and if we get enough rest of body we usually get enough sleep if we only let ourselves sleep and do not worry to prevent it. But we should, as far as possible, seek those physical conditions that physiologically encourage sleep while we are resting. That rest of body is more necessary than much sleep, and that insomnia is clearly provoked by an easily prevented mental mood, are no warrant for us to neglect any of the obvious aids to easy slumber.

CONQUERING THE NOISE NUISANCE.

Light keeps some people awake; usually more than need be because they worry about it and magnify it as an impediment. Most people can have their bed hours in the dark; they can either go to bed early enough to have eight hours dark, or they can darken their rooms. Many are kept awake by noises great and small; often needlessly kept awake by trifling sounds that would be wholly negligible save for their propensity to be nagged by them. The irritation grows by indulgence; every time they hear the sounds and regard them as annoying, the horror grows. If the noises are produced by people or by animals, and are therefore preventable, the offensiveness is usually greater; the sounds of wind and waves and rain, or even gentle thunder are less sleep-killing than the coughing or snoring of an innocent neighbor or the distant barking of a dog.

Most people can overcome very much of any morbid sensitiveness to sound if they understand these truths and will try. But few will try hard enough and be wise enough for this consummation; and so some remedy for the noises of creation is proper for such people, if a remedy can be found that is harmless. The measure, whatever it is, must be mostly subjective, the noises themselves can be controlled but little; they must be kept out; the sound waves must be prevented from entering the ears. Cotton stuffed into the ears does a little good, but some waves pass through it unless it is packed so firmly into the meati as to cause discomfort, which, of course, renders the scheme nugatory. A cloth or other dressing tied over the ears may keep out many noises, but here again the apparatus, in order to be efficient, must press so tightly as to frustrate its purpose by the discomfort it causes. The thing needed is an air-tight, non-vibrating stopper for the ears; one that will not itself make a disagreeable sensation by pressure or otherwise; one that is easily applied by the patient himself, and one that is harmless. Common paraffin seems to fill these conditions; it is easily used, is harmless and wonderfully efficient. A small mass of the substance is warmed in the mouth, chewed perhaps to soften it the more rapidly, and is then pressed firmly but gently into the ear. It adjusts itself instantly to the external meatus, hardens as it cools and remains an almost complete bar to the passage of sound waves, without producing a disagreeable sensation, indeed, with so little sensation of any sort that its presence is soon forgotten. It is applied at bed time and removed by the finger in the morning; or it may be worn during the day if it comforts the patient, but not all the day for fear of interfering with the normal drying of the external ear. It may be used in this way for a long time with no harm of any sort and with the great advantage that it makes the patient nearly, or quite, independent of the unavoidable noises of his environment. This device may render it unnecessary to go to the country to sleep in order to escape from the city noises; it may make it less necessary to keep the children still to avoid waking their elders, and it may help the sensitive children to finish their naps in spite of the inevitable noises of the day.

OTHER TROUBLES.

Many people are poor sleepers for want of sufficient clothing in bed; cold feet are especially apt to keep them awake. A good bed is needful, for it rests the body most and so helps towards sleep. The remedies

for these defects are obvious, but often beyond reach. Overfeeding often causes insomnia, if it does not make the drowsiness of indigestion, causing heavy sleep in the early evening and miserable wakefulness afterward; and overstimulation, especially with tea and coffee, is often fatal to good sleep. These troubles are always correctable. A loaded large intestine often keeps a sensitive person awake for half the night, when a prompt evacuation by an enema, a glycerin suppository or a quick-acting saline, relieves the insomnia for the time completely Foul air to breathe is a frequent cause of wakefulness; for this the remedy is fresh air in great abundance; and people do not take cold in well ventilated bedrooms.

When people are up and about they rarely become sleepy because their brains are tired. They often thus are sleepy, but this is mainly due to fatigue of the body or to some disarrangement of the digestive organs. Sleep comes normally with a normal and unabused body that has been fatigued a little and then been put to rest, and it is helped by cessation of active thinking, by darkness, by stillness, by mental tranquillity and a happy spirit. These things are first to be secured if possible; then the sleep comes as a natural consequence and, with hardly an exception, in sufficient amount. The sleep is secondary, not primary; these other things are primary and of great importance.

We must not count the hours of our slumber for fear it is not enough; that would break the charm of the influence and spoil the game. We may keep a record if we like, and it may be useful for our amusement and to help to fix the exact amount of sleep (which now no man knows) that, in our social zone, is physiologic for the man, woman and child of the present century with their varying orders of enlightenment and manifold grades of work and play. But this question can never be settled by the one poor slave of insomnia or by a thousand of them, and the question can wait. It profits each such unfortunate to neglect the race interests for his own, and to put his mind, in the calmest sincerity, to the task of saving himself from his thraldom—and the task need not be hard nor its benefits uncertain.

THE TREATMENT OF THYROIDISM BY A SPECIFIC SERUM.*

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As the atypical forms of exophthalmic goiter are common and often overlooked on account of the nomenclature, it would be more accurate and at the same time less confusing to designate the condition as hyperthyroidism or simply thyroidism. The cases can be classified somewhat in the order of frequency of their occurrence in the following groups:

1. Simple chronic exophthalmic goiter or thyroidism of moderate severity with all the symptoms which gave origin to the name.

2. Atypical thyroidism which includes many of the early cases and those with more or less irregular symptoms, such as absence of goiter or of exophthalmos or of both; or those which complain chiefly of gastrointestinal disturbance with pain.

3. The chronic toxic cases of thyroidism or severe forms of the disease with slight fever, which may be the terminal stage of the common atypical form, or show little or no exophthalmos or goiter from the outset.

4. The acute toxic thyroidism presenting a clinical picture which Dr. W. G. Thompson has aptly compared to that of malignant endocarditis. These patients show little or no exophthalmos and a small soft thyroid and suffer from fever which may be quite high.

5. The psychopathic or neuropathic cases of thyroidism, which are a comparatively rare but, from a therapeutic standpoint at least, an important group. They give symptoms which sooner or later indicate organic change in the central nervous system and are only relievable in the early stages of the disease.

SYMPTOMS OF THE DIFFERENT TYPES OF THYROIDISM.

The most characteristic symptoms are those dependent on the vasomotor and nervous disturbances. The cutaneous blushing and feeling of heat, the "nervousness," tremor and often insomnia and the tachycardia with a soft, weak pulse are quite constant in all cases.

The exophthalmos and goiter may each vary within such wide limits that they should be considered as much confirmatory as positive signs. The subjective feelings of general discomfort, weakness, throbbing of the heart, dyspnea and frequently abnormal thirst must be borne in mind, as they are generally the first to disappear in any given case if the serum therapy is to succeed, while the other symptoms usually improve very slowly.

The *atypical group* includes some of the incipient cases which show no goiter nor exophthalmos, but can be recognized by the vasomotor and nervous disturbances; and the cases with goiter of long standing which not infrequently develop marked thyroidism quite suddenly and have no exophthalmos; and, finally, the cases usually with no exophthalmos but some goiter, which at irregular intervals suffer from pain referred to the abdomen or thorax and evidently due to excessive fermentation of food. At these periods the pulse becomes very rapid, but otherwise the whole clinical picture is one of acute indigestion, and unless the goiter were noted in conjunction with the tachycardia the probable cause of the difficulty is easily overlooked.

The *chronic toxic* type of this disease presents no particular difficulties in diagnosis, except that I have seen it occur and give every evidence of ultimately proving fatal with a decreasing exophthalmos, goiter and pulse rate, the greatest danger seeming to lie in the exhausted and degenerated heart muscles. It is in these chronic cases that the bad secondary lesions of blood stasis and general anasarca dependent on the impaired cardiac action become so prominent; and unless there is a considerable goiter or exophthalmos the true cause of the trouble may not be detected.

The necessity of the recognition of *acute toxic thyroidism needs* considerable emphasis. Though the condition is quite uncommon, I believe that it is by no means so rare as is generally supposed, nor so difficult to recognize after attention is called to it. Judging from the few cases I have seen and known about, this particular condition must have a very high mortality, and yet I believe that of all the different types of exophthalmic goiter this is the most amenable to the serum treatment. The history of such a case usually covers a few weeks of the common vasomotor and nervous symptoms which more or less rapidly become worse and are accompanied by fever until the clinical picture, as Dr. W. G.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Thompson has described it, is almost exactly that of malignant endocarditis. There are the flushed and sunken cheeks, dry tongue, rapid labored breathing, tumultous heart action, the nausea, vomiting and diarrhea of any toxic state and often thromboses or extravasations of blood in the neighborhood of the peripheral vessels. There may also be enlargement of the liver with pain and evidence of perihepatitis. The terminal stages are accompanied by delirium and finally coma, and as the urine may contain albumin or sugar the possible errors in diagnosis are evident. There is usually no exophthalmos, at least there was none in the few cases I have seen, and about the only characteristic feature among all the symptoms is the thyroid enlargement. Without some increase in size of this organ open to detection by sight or touch, I do not believe the correct diagnosis can be made except by the most careful exclusion of all other possible conditions and by the trial of the antithyroid serum. Fortunately the thyroid, though small, is generally at least palpable and this is a valuable guide.

The *psychopathic or neuropathic* forms of thyroidism constitute a small but important group of cases, and when there is taken into consideration the evident poisoning of the nervous system, which is so prominent a feature of this disorder, the only wonder is that pronounced disease of the brain or spinal cord or peripheral nerves does not more often supervene on the usual insomnia and general state of mental and nervous excitation. In looking over the histories and recalling the individuals it is quite possible to trace the progress of the psychic changes from the mild forms of alternating exaltation and depression through a melancholic stage to pronounced delusions with homicidal tendencies. Of two bad cases of this description which I have seen, one after recovery and the other in the intervals of the malady, could recall to memory all their disordered imaginings and acts and were more or less aware of their disordered character during the period in which they suffered from mental derangement, but they were controlled by overpowering impulses. In the beginning these patients ought to be curable; but after organic changes in the nervous system have occurred any great improvement is probably impossible.

A SPECIFIC SERUM.

The preliminary report on the treatment of exophthalmic goiter by a specic serum published in February, 1906,[1] contained statements which must now be somewhat modified. The serum is made by separating the nucleoproteids and thyroglobulin from the human thyroid gland and injecting these bodies into the peritoneal cavities of rabbits, dogs or sheep. The inoculations are continued at intervals of from five to six days for about six weeks and the animals are then bled from the carotid. The serum thus obtained presumably contains an antibody or cytotoxin which is specific in its action on the thyroidal epithelium and an antibody or antitoxin for the thyroglobulin which is believed to be the active and, in diseased states, the toxic product of the gland. I formerly attempted to draw some clinical distinction between the antitoxic and cytotoxic elements in the serum, but more extensive experience has shown this to be probably erroneous. Hence, as the antitoxin has at the best a more or less theoretic existence, while the cytotoxin can be demonstrated in the test tube and all the clinical phenomena can be explained by the action of the cytotoxin which is certainly present, I shall mention only the cytotoxin.

Nevertheless, a serum made by excluding all the globulin and using only the nucleoproteids from a pathologic thyroid (exophthalmic) seems at least dangerous (Case 38), while neither the normal nor the pathologic serum made in the usual way by combining the nucleoproteids and thyroglobulin in the injections has produced, at the worst, anything more than severe symptoms.

Early in our experience the need of some means of standardization of the different sera became apparent, and Dr. Beebe devised an agglutinin reaction by which an estimate could be made in any given sample of serum of its cytotoxin activity. The complicated details of this test will be found in his article; it is enough to state here that minute fragments of human thyroid gland suspended in salt solution can be agglutinated by a specific antithyroid serum in a manner quite similar to the agglutination of typhoid bacilli in the Widal reaction. The more pronounced and rapid is this antithyroid agglutination the more effect will the serum exhibit clinically, although, unfortunately, this is not a very reliable therapeutic guide. Nevertheless, it is of considerable assistance in judging of the presence or entire absence of any active constituent in the serum yielded by any particular animal. In other words, some animals were found to yield a serum which gave no agglutinin test and in such instances the effect on the patient was entirely negative. At the same time it was demonstrated that only a large gray buck of the Belgian hare species of rabbit could be at all relied on; white rabbits have been found to be of practically no use. The dog, which in respect to the quantity of serum obtainable would be a very desirable animal, produced a serum showing in the test tube slight activity; but the sheep was considerably better, although a great quantity of thyroids were required for the inoculations; and the material used for immunizing purposes is not inexhaustible even if its character which, I believe, is a very important factor in the results, is not considered. For the sake of brevity in description, I shall call the serum obtained by inoculating rabbits with the combined nucleoproteids and thyroglobulin of the pathologic thyroids of this disease, the pathologic serum. For our supply of these glands we have to thank Dr. Charles Mayo, of Rochester, Minn., who has kept us pretty well provided with the organs he has removed at operation.

By normal rabbit, dog or sheep serum is meant an antitoxic or antithyroidal serum obtained by inoculating these animals with the combined nucleoproteids and thyroglobulin separated from the normal human gland.

It is worth noting at the same time that the nucleoproteids in the pathologic gland are in far greater abundance than in the normal gland, and, as the character of these proteids may differ from the normal, so there may be some difference in the serum which can not be detected chemically, but which when tested clinically does produce a different result. At first the normal serum seemed entirely unsatisfactory and the pathologic serum appeared to be the only hope, but now, fortunately, the discrepancies between the effects of the two sera have not been found to be so great as was formerly believed. The normal serum geenrally shows a less active agglutinin reaction than the pathologic and those specimens of sera which may be considered of maximum ac-

1. The Journal A. M. A., Feb. 17, 1906.

tivity have only been obtained from one or two out of a great number of rabbits and then were made by inoculations from the pathologic gland. In the administration of the different sera a certain proportion of the patients hitherto have not reacted at all to the normal serum, or if they did the result has appeared harmful rather than beneficial, and a few patients have not improved unless given the very best grade of pathologic serum which can be obtained only from exceptional animals. There is much yet to be learned, however, both about the dosage of any given serum and the frequency of its administration, and I have hopes that the normal serum can be made effective in a much greater proportion of cases than it has been in the past. For if a change for the better can once be established in a patient's condition the normal serum and even the less active specimens of normal serum have generally proved capable of checking the more or less frequent exacerbations of thyroidism. On the other hand, the normal dog serum, although by the agglutinin test the least active of all the sera, has seemed in a few instances to have given the best results.

STATISTICS.

Our statistics include a total of 90 cases, of which 23 have been cured of all symptoms of thyroidism, 52 have been more or less improved and 11 have failed to improve (as yet) and four have died. Of the latter, one was an acute toxic case who immediately after the administration of the serum passed from an apparently moribund to a convalescent condition, but later, as the recovery was very slow, I operated on her with a fatal result. The second was in a chronic toxic state and, after improving under the administration of the serum, went home and some six weeks later suddenly dropped dead. At the autopsy there was found a pronounced status lymphaticus. The third case, one of the very acute toxic type, died, after improving in pulse, respiration and temperature, with every evidence of a hemorrhage into the respiratory center and, I think, in spite of the serum and not because of its administration; too little apparently was given to prevent the toxemic extravasation of blood. The fourth patient was losing ground and died soon after the administration of the serum, which in this instance differed from the other sera in that it was made only from the nucleoproteids, and hence was a pure cytotoxin (Case 38).

In the 54 personally treated or supervised cases, 15 patients have been cured and 29 improved; six cases were failures and four deaths occurred. In many of the improved cases the patients, I think, are really cured, but as several months must elapse before the result can be determined they can not yet be passed on, and the same can be said of those which have apparently failed. I have several times been surprised to find patients whom I have dismissed as unbenefited after a short trial return a few weeks or months later showing considerable change for the better. I believe, therefore, that if even the slightest improvement in almost any one subjective or objective symptom can be detected within the first two weeks of treatment there is a fair prospect of ultimate cure. If a patient does not at first respond, different grades of sera should be tried, as well as sera from different species of animals, and, if possible, that which I have called the pathologic serum; by varying the dosage and intervals and noting the results much more success can be expected than under any other method of treatment.

PROGNOSIS.

In judging the probable results of the injections the most important factors to be considered are, first, the kind of thyroid possessed by the patient and, next, the duration of the disease and its clinical type. Histologically it is possible to recognize four fairly distinct types of gland; one of these shows increased vascularity, another simple hypertrophy with increase of colloid, and another great increase of epithelium, while in the fourth type there is a marked anatomic change with a loss of the greater part of the thyroid structure. The last represents the terminal stages of a chronic thyroidism and is probably hopeless from a therapeutic standpoint. Some clinical distinction can also be drawn between these different kinds of thyroids. Patients who have soft thyroids respond more easily to the serum than the patients with hard glands and, as a general rule, the smaller the organ the better is the prognosis. The large, hard glands with an irregular and nodular surface, especially if the superficial veins of the neck are numerous and dilated, are, I believe, incapable of much, if any, betterment and belong in the fourth histologic class.

As to the type of the disease, the acute toxic cases with fever seem to do the best with the least serum and at the same time they show the least reaction; and there also seems to be little difference whether the normal or pathologic serum is used, provided, only, it is known to possess considerable activity by the agglutinin test. Apparently this is because the thyroid has not had time to become greatly altered and is approximately of normal structure. I think, however, that the pathologic serum is a little better than the normal for these cases, but the difference is so slight that it is well within the limit of error in observation. But all the chronic forms of the disease respond better to the pathologic than they do to the normal serum and, although the distinction is far from being exact, the variation in the kind of serum required points to the probable condition of the thyroid. As a general rule the more nearly normal it is the better will the normal serum act.

The chronic toxic types of the disease with severe symptoms both of thyroidism and of the secondary lesions dependent on disturbed circulation present the worst prognosis and are the least amenable to this or, in fact, to any form of treatment. The thyroids of these patients are generally large and hard and of irregular outline and the veins of the neck numerous and dilated. As histologically there is very little of the original gland structure left in these cases, it is difficult to conceive of any benefit from a specific antithyroid serum. Nevertheless, one such patient (Case 34) for a time at least improved.

Of the atypical chronic class, those whose chief complaints have been disordered digestion accompanied by fermentation, abdominal or thoracic pain and bad tachycardia, have also generally proved therapeutic failures. The psychopathic and neuropathic cases must, of course, have a poor prognosis unless the original toxemia can be checked before organic nerve lesions have been produced.

THE REACTION TO INJECTIONS.

The reaction to the injection of the serum is of two distinct kinds. One is fortunately rare and occurs within about five minutes of the injection. There is a sudden dilatation of all the superficial capillaries; this "blush" may be succeeded by cyanosis and is accompanied by a feeling of distressing dyspnea and faintness with rapid

and feeble pulse; nausea and vomiting and diarrhea follow. These somewhat alarming symptoms pass off in an hour or sooner, if diffusible stimulants are administered, but the patient remains weak and uncomfortable for about a day.

The other reaction is fairly constant and, as a general rule, seems a necessary preliminary to the subsequent improvement. At the point of the injection there is immediately some burning sensation which is followed within a few hours by considerable swelling and erythema which may extend from the shoulder to the wrist when the injection is made in the arm, and continues for several days. This erysipeloid edema has sometimes been much more pronounced with the pathologic than with the normal serum, but the pathologic serum, though causing greater local redness and swelling, gives rise to less pain than the normal. Then at about the same time or some twelve hours after the injection there is generally some fever with increase in the tachycardia or irregular heart action and often diarrhea which may last a day or so. If another injection is given in the other arm before the subsidence of the swelling in the first arm the latter will be made worse and the constitutional symptoms intensified. Indeed, I believe by pushing the serum or gently increasing the dose there might be produced a fatal result. At all events, by repeating the dose too often the patient can be so exhausted that harm rather than good is the immediate consequence. In only a few instances have I seen this constitutional reaction postponed till the end of five or six days; and then it seemed to be connected with menstruation, which began in these particular patients about that time. For the serum, if administered just before or at the beginning of menstruation, may cause the ordinary reaction to be increased, and hence the date of the monthly period must always be ascertained and an injection postponed until the flow of blood has at least nearly ceased.

ASSIMILATION OF THE SERUM.

In the administration of the serum the patient should be put to bed for the first week; no restriction in diet is necessary beyond plain wholesome food without stimulants, except in the toxic cases and in patients with diarrhea who will need more or less careful feeding. Then 1 c.c. of a serum which has been proved fairly active by the agglutinin test is given hypodermically into the subcutaneous tissue in the back of the upper arm between the skin and muscular fascia. I have always selected this region, as it is accessible and free from veins and is loose enough to permit of considerable swelling without undue pain or danger of sloughing. The local reaction around the point of injection is best treated by a wet dressing of a 1 to 60 or 80 solution of carbolic acid in water and the constitutional reaction which appears a few hours later, by the administration, every three or four hours, of about three grains of iodid of potassium with about five minims of the tincture of strophanthus. The iodid of potassium has apparently a specific effect on the thyroidism and aids greatly in checking any rapid or irregular heart action. After all signs of the reaction have subsided there should be some improvement in the subjective symptoms. If an active pathologic serum has been employed the improvement occurs a little earlier and is a little more marked than with the normal serum. The restlessness, the feeling of discomfort, the insomnia, and the "thumping" of the heart subsides first and then the pulse becomes slightly slower and stronger. The best results are obtained by giving from four to eight injections of 1 c.c. each every third or fourth day or sometimes at shorter intervals, but waiting each time until the previous reaction has subsided. Some degree of immunity at least to the constitutional reaction seems finally to become established. The acute toxic cases with fever, as stated previously, have not shown any reaction, but after the first day have improved steadily and quite rapidly so there seems no reasonable expectation of any disagreeable reaction in these cases. As they are the most dangerous type of the disease and very apt to prove fatal, especially if they show any degree of cerebral symptoms, the possibilities of the reaction should be disregarded and an active serum pushed by the administration at intervals of 24 hours of 1 c.c. at a dose which may be increased by one-half a c.c. each 24 hours until some noticeable improvement is obtained or until a half-dozen doses have been given.

All the other forms of the disease do not do so well, and some judgment is necessary to determine both the amount of the dose and the frequency of its repetition. About 1 c.c. of an active serum has proved a useful average quantity, but some variation may be required. A small dose of five or ten minims, especially if the serum is not very active, seems to stimulate the thyroid and to make the general condition appreciably worse; and a large dose of 2 or 3 c.c. has produced such alarming symptoms of rapid and irregular heart action that I believe a fatal result could thus be obtained. But within these limits a certain amount of experimentation is necessary; if the usual 1 c.c. dose does not prove beneficial after a couple of trials, 1.5 c.c. or 2 c.c. can next be employed. It will often be found that this change will cause less reaction and more benefit than decreasing the amount. Occasionally, however, .5 or .25 c.c. of very active serum yield the best results; or a serum from another species of animal can be tried. Then after giving some half-dozen injections at intervals of three or four days the subsequent repetitions have to be considered. Too frequent and too long continued treatment seems to do harm rather than good and to produce a condition of muscular weakness and prostration which is as bad or worse than that due to the primary thyroidism. Therefore, the serum should only be administered about once a week for three or four months and after that at longer intervals. Exacerbations of the thyroidism may appear from time to time, but always less and less frequently until finally the patient remains well. As a guide in the administration of the serum a vicious circle hypothesis for the etiology of the condition of thyroidism is of some service. All that is necessary is to break this circle by the inhibitive power of the serum on the thyroid epithelium and then to give no more injections than are demanded to keep it broken until a return to the normal equilibrium is obtained. This seems to require months, but the present indications are that it will occur in the majority of the cases, and I am beginning to have some hopes for even the chronic toxic cases. But a favorable outcome can not be hastened by increasing the quantity or frequency of the dose and, except in the acute toxic cases with fever, which alone are strikingly amenable to this treatment, there is nothing spectacular in the recovery. It is very slow and often intermittent.

The changes in the size and character of the thyroid perhaps better than anything else give an idea of what may be expected as to the rapidity of the general improvement. In the average case the circumference of

the neck has shrunken about one-quarter of an inch a month, at first and then remained stationary for some weeks and later again decreased until it reached the normal size in a perfect cure. A thyroid which is smooth and large and rather soft, in other words one which has undergone simple hypertrophy at first softens and diminishes in size quite perceptibly and rapidly, apparently from loss of colloid and congestion. Then there is a long period when very little shrinkage or change can be detected, except a slightly lowered position. During this time it becomes firmer and harder at menstruation or in slight exacerbations of the disorder which generally indicate a repetition of the injection. Later, or at the end of four or five months, it may once more soften and be gradually reduced to a normal size. On the other hand, a thyroid which is hard at the outset shows the first sign of improvement by becoming softer. I do not believe that the large glands, whether soft or hard, ever entirely disappear, for at least one of these patients who has remained entirely free from all symptoms, even the exophthalmos, for several months still has a quite perceptible fibrous goiter. Occasionally also after the administration of the serum patients complain of some soreness or pain in the region of the thyroid or throat but I have never under these conditions noted anything like active inflammation in the gland. Those who have recovered completely have required about six months of treatment and observation before all signs of the disease, or more accurately of overactivity of the thyroid, have disappeared. But if improvement in almost any one symptom, either subjective or objective, can be detected during the first week or two of treatment, even if the pulse or other signs do not respond, the case should not be given up immediately as hopeless. Slight variations can be made in the dosage of the serum or another kind of serum should be tried, bearing in mind that some patients, especially these with chronic toxic or severe symptoms of long duration and generally possessing hard or very vascular thyroids, will not respond at all to the normal serum, but will to the pathologic, or sometimes only to a particular pathologic serum of exceptional activity.

A few patients, especially those in middle life or older, who generally have small thyroids with slight or no exophthalmos and rather severe nervous symptoms, show a somewhat peculiar reaction. They improve in sleep and in the restless discomfort, and then if the injections are continued they become weaker and are made worse than ever. But if as soon as the initial improvement is noted, the injections are suspended and the patient put under the best hygienic outdoor conditions, they will gradually improve very much and at the end of two or three months, treatment can be resumed. It requires considerable judgment, coupled with some experience not to give such cases up as hopeless at the end of the first week, but many of the patients I believe will ultimately recover if patience is practiced along with the regulation rest treatment combined with the serum administered at long intervals. It is possible that some element of myxedema may here be involved and that thyroid feeding rather than antithyroid injections may be indicated.

The convalescence in these as in all the other rather severe forms of thyroidism is very like that from typhoid fever or any other exhausting disease, and is exceedingly slow and often interrupted by exacerbations of the process which should be met with another injection of the serum. But after a patient has once made good progress towards recovery and then shows signs of relapse it is noticeable that almost any normal or pathologic serum, if administered without delay, will stop the symptoms. At the best, a moderate proportion of the chronic cases of this disease, especially those patients past middle age and with hard glands can not be benefited by either the normal or pathologic serum and for these, after a fair trial for at least a month, I think that surgery offers the best hope.

To correct an erroneous impression of this serum which seems to be prevalent, I must repeat that only in the rare acute cases can any quick results be expected and then there is a long period of convalescence before recovery is completed. The majority of the patients respond very slowly and several weeks may elapse before they are evidently improved. I believe, however, that with greater experience in the preparation of this peculiar remedy and with care and patience in its administration many of the chronic cases can finally be greatly benefited if not ultimately entirely cured.

The details of all the histories can be found in The Transactions of the Association of American Physicians of 1906. Only typical examples of two cases are given here and in addition two of the four fatal cases. In the other two fatal cases the patients had first been improved by the serum and the deaths took place long after the cessation of the injections; one from operation and subsequent very acute thyroidism, and the other apparently on account of a condition of status lymphaticus. Of the two fatal cases here given, the first (Case 37), I think, died from an unusually acute and severe form of the disease and not at all because of the administration of the serum.

The fatal ending in Case 38 might with some reason be ascribed to the effects of the serum, although it must be borne in mind that the disease was rather acute and severe and the patient had previously been losing ground. She received a serum made entirely from the nucleoproteids of a thyroid gland taken from a patient who had died of exopthalmic goiter. It differed from the other sera in not having any globulin combined with the nucleoproteids in the inoculations and so should serve as a warning for using great care in the administration of such a serum. I had several times previously given this same serum in much larger dosage (though at not quite such short intervals) and seemingly with benefit to others, but since this experience I have never dared to give a pure cytotoxin at less intervals than five days or a week, as the effect may be cumulative, and cause no symptoms for two or three days.

Case 13.—J. McG., age 27, single, female, has been nervous for years, but first noted typical signs two years ago. She had been confined to bed for a month, with loss rather than gain in strength. There was a moderate-sized soft goiter; neck measured 14 inches in circumference; pulse was from 110 to 130 with throbbing heart and pulsating thorax.

Treatment.—January 12 to 22, she received in divided doses 5 c.c. of normal rabbit serum and 1 c.c. of pathologic serum with slow improvement in subjective symptoms and slightly lowered pulse rate. She left the hospital for home a little stronger, with less heart throbbing and with the neck ¾ of an inch less in circumference. Pulse was 110. After this at intervals at first of four days and later of a week she received injections of different normal and pathologic sera, apparently improving more under the latter than the former and with more reaction. The pulse during March remained about 100 but of good quality. The thyroid was firmer and a little smaller, and she was able to resume work. The last injection was given April 14, and May 6 the pulse was 84, the thyroid small and again soft. The neck 12¼ inches in circumference and the general condition normal. Since the first of March

she has been working steadily as an office nurse and stenographer and has been conscious of no physical disability. At present (August, 1906) there is no exophthalmos, no tremor, no abnormal subjective symptoms, the pulse is about 80 and though there is still a slight fulness of the neck, it is so slight that she can be reported as cured.

CASE. 32.—A. P., aged 29, single, Swedish domestic, entered the Presbyterian hospital under the care of Dr. W. G. Thompson, Dec. 11, 1905.

Examination.—She had a temperature of 102, pulse of 120, and respiration of 25 to the minute. There was a slight but perfectly plain, soft symmetrical goiter, precordial heave, marked pulsation in the cervical vessels and evident dyspnea, but no exophthalmos. She was very weak and tremulous, and had some nausea and diarrhea. She gave a history chiefly of this and "nervousness" and sleeplessness for only the past two weeks, and had therefore an acute type of the disease. The condition grew rapidly worse, and December 16 the temperature was 104, the pulse 136 and the respirations 36; the tongue was dry and hard, there were ecchymotic spots in various parts of the body and evident thrombosis in some of the veins of both legs. The picture was one of a severe and probably fatal toxemia.

Treatment.—December 16 and 17 she received 1 c.c. and on the 20th 2 c.c. of a very active pathologic serum and no other medication then or afterward. There was no appreciable reaction and after the second dose there was a very marked improvement in all the symptoms. December 22 the temperature, pulse and respiration were practically normal.

Result.—There ensued a steady through rather slow progress toward recovery. She was up and around the ward in the middle of January with no signs of the disease, except weakness, some anorexia and a soft thyroid which could be felt, but was not perceptible to sight. She left the hospital in February apparently well and when last seen on April 30 was on her way to make a visit in Sweden and presented no sign of disease.

CASE 37.—M. R., aged 18, single, female, first noted a soft goiter in October, 1905. For this she was given thyroid tablets. A month later she fainted in the gymnasium and symptoms of exophthalmic goiter were evident. After cessation of the thyroid feeding the thyroidism subsided but reappeared in December after a tonsillitis. During the next three months she became normal except for a small soft goiter. In April there were again slight signs of thyroidism but these disappeared until on May 4 a severe gastroenteritis occurred after some indiscretion in diet. On May 5 and 6, the signs of Graves' disease quite suddenly recurred and became severe with headache, great restlessness and tachycardia. On May 7 the pulse was counted at from 200 to 210. The respiration was labored and between 30 and 40 to the minute. On May 8, 9 and 10 she received 1 c.c. of a moderately active pathologic serum without any reaction except a slight and transient local redness. The heart action and respiration began to improve on May 9 and on May 11, the pulse was about 90 and good, and the breathing 23 to the minute. The intense headache on May 8 and the restlessness grew worse and on May 10 stupor developed and deepened into coma on May 13, and a right-sided, incomplete hemiplegia was then noted and this was soon followed by Cheyne-Stokes respiration. Breathing then stopped completely about 10.45 a. m., and as the pulse continued at from 110 to 120 but of good quality, artificial respiration was begun and continued until 5 p. m. The condition then became worse and the patient died. No autopsy was permitted.

Remarks.—I believe that the cause of death was a hemorrhage into the respiratory center and that the fatal ending took place not because of, but in spite of the serum. The administration of serum should have been begun earlier and pushed more vigorously. It is worth noting that just after respiration ceased at 11 a. m. on May 13, I gave 2 c.c. of an active normal serum in the preparation of which much thyroglobulin was used and hence, theoretically, the serum contained considerable antithyroglobulin. About two hours after its administration there was a noticeable improvement and natural respiration was possible for about 20 minutes. Respiration then again failed and could not be restored.

CASE 38.—A. G., aged 15, single, female, had suffered from typical symptoms of the disease, but with no exophthalmos for about four months.

History.—She entered the Presbyterian hospital in January, 1906, and received all the usual treatment with a steady, slow deterioration. She was given different specimens of serum without any change and reacted only to a very active pathologic serum from one particular rabbit. This reaction consisted in an exacerbation of all symptoms with fever, lasting for about twenty-four hours after the injection and followed by a brief improvement and almost immediately by a recurrence of all characteristic symptoms.

Examination.—May 20, 1906, the pulse varied from 130 to 150. There was a hard symmetrical goiter of moderate size. The neck measured 13 inches in circumference; the heart was dilated and overacting; the temperature ranged between 99 and 101 and the patient was so weak as to be unable to sit up in bed without fainting.

Treatment.—A very active pathologic serum made only from the nucleoproteids of the thyroid of a patient who had died of this disease, was employed. This was used as no other serum had shown the least effect (except one, and that only with transient benefit). At 10 a. m. and at 11 p. m. May 20, and at 10 p. m. May 21 she received 10 minims of this cytotoxin. There resulted only a slight local erythema until the morning of May 26 and then the temperature dropped from 100 to 96, the pulse began to rise rapidly from 130 to 180, and the patient became extremely restless, vomited frequently, and in the afternoon passed into a condition of stupor. On the previous day the goiter, which had been hard, began to soften and shrink, and during the afternoon of May 23 could only be made out as a small soft mass not much larger than the normal gland. The circumference of the neck in these two days decreased from 13 to 11¼ inches. Three c.c. of an active normal gland serum were then administered in the faint hope of averting the apparently fatal result, as the normal serum can be supposed to contain at least some antithyroglobulin. Some hours later the pulse fell from 180 to 120 but the stupor continued and the patient died at 11 p. m., May 23. With great difficulty, the house physician, Dr. Mason, obtained only the thyroid gland, which showed the following changes as described by Dr. James Ewing.

Examination of Thyroid.—The material received for examination consisted of a portion of one lobe of the thyroid removed 2 hours after death and measuring 2.5 × 3 cm. This tissue was strikingly light yellowish in color as though very fatty and anemic; the consistence was greatly reduced; no colloid could be detected except in a very few small cystic areas from 1 to 2 m.m. in diameter. Although in general very anemic, the tissue showed a few pin-point hemorrhages. The tissue was hardened in 80 per cent. alcohol, in Zenker's fluid, and in Orth's fluid. Sections showed the usual changes of an active toxic form of exophthalmic goiter. There were visible marked cellular hyperplasia, many new alveoli, a few miliary hemorrhages, extreme granular degeneration of tubule cells, and extensive exfoliation of these cells. Much of this exfoliation appears to be due to traumatism applied during removal of the gland. Staining by osmic acid after fixation in Muller-formol shows comparatively little fatty degeneration. The colloid is limited to a few large alveoli containing semifluid colloid mixed with many exfoliated cells. The only changes that seem possibly referable to action of the serum are the anemia and the acute degeneration of the cells. Otherwise, the changes do not differ from those seen in the average case of acute fatal exophthalmic goiter.

Philippine Plants.—The *Philippine Journal of Science* issues a supplement dated April 15, 1906, containing a systematic description, by E. D. Merrel, of the flora of the Lamao Forest Reserve, comprising 1,151 species in 611 genera from the musci, vascular cryptogams and flowering plants, but not the fungi algæ and lichens. Four hundred and eighty-five species are trees and 201 shrubs and woody plants. The monograph contains 142 pages, but it is admitted that a large number of species occurring in the district have not been catalogued.

A SERUM HAVING THERAPEUTIC VALUE IN THE TREATMENT OF EXOPHTHALMIC GOITER.*

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A preliminary paper was published in THE JOURNAL, Feb. 17, 1906, describing the preparation of a serum having therapeutic value in the treatment of exophthalmic goiter. Since that date I have had a great deal more experience in the preparation of the serum, and its therapeutic effect has been carefully tried on many more patients so that it is now possible to describe improved processes for its manufacture and to state more nearly what its value is likely to be.

The theoretical basis was described in sufficient detail in the first paper. I may say, however, that since the publication of the article in the *Journal of Experimental Medicine*,[1] describing the experiments which led to the therapeutic application in exophthalmic goiter, I have made many more experiments of the same nature, and as a result it may safely be concluded that a serum having a high degree of specificity can be prepared by injecting the purified nucleoproteids of a given organ into some animal of alien species. The experiments have demonstrated, likewise, that absolute specificity can not be attained by this method, and I believe that no method will enable us to prepare a serum having absolutely specific properties.

At the time of our first report Dr. Rogers and I had used only the thyroid glands from two fatal cases of exophthalmic goiter as a source of the proteids. For theoretical and practical reasons, however, we followed these first experiments by others in which the serum had been developed by proteids derived from normal human glands obtained at autopsy. The method of preparation has been the same in each case and is given in detail below.

PREPARATION OF THE PROTEIDS.

Normal human glands obtained at autopsy are ground to a very fine hash by a special machine. From six to eight times the volume of 0.8 per cent. salt solution is added and the whole thoroughly shaken and allowed to extract for twelve hours in the refrigerator, chloroform and thymol being added to prevent bacterial growth. At the end of this period the coarser particles are removed by straining through gauze, the filtrate is centrifugated and finally filtered to remove the finest particles. The clear filtrate contains three classes of proteids, namely, nucleoproteids, globulins and albumins, the first two of which we wish to use. Nucleoproteids are precipitated by the addition of acetic acid to a frank acid reaction, using litmus as an indicator. I find a very marked difference between normal and goiter glands in respect to this precipitation behavior. It is rarely possible to obtain a definite flocculent precipitate by the addition of acetic acid to the extract of normal glands.

The normal gland contains a very small proportion of nuclear material and a relatively large amount of colloid. The glands can not be obtained in a perfectly fresh condition, the autopsies varying from 12 to 50 hours postmortem and, although the bodies are kept cool, there is opportunity for autolytic changes which readily occur. I have never failed to precipitate nucleoproteids from extracts of perfectly fresh normal glands of sheep or dogs, but it is often very scanty in amount, and if the glands are allowed to remain in a warm place for a few hours no precipitate will form.

Since the object is to obtain both nucleoproteids and globulin for injection, it has been found best to precipitate both together by making the saline extract acid with acetic acid and then to precipitate the globulin by the addition of an equal volume of saturated ammonium sulphate solution. After standing in the refrigerator for a few hours a voluminous precipitate has collected in such form that it may be filtrated out readily. These proteids are twice redissolved in alkaline sodium chlorid solution and reprecipitated by acetic acid and ammonium sulphate solution. After the last filtration the proteids are carefully removed from the paper and dialyzed in a parchment tube for four days with the addition of thymol as an antiseptic. Such a period of dialysis does not remove all the ammonium sulphate, but for the purpose of inoculating the animals there is no objection to the small quantity remaining. At the end of this period, the contents of the dialysis sack are made feebly alkaline with sodium carbonate, and the solution which contains the desired proteids is kept in the refrigerator. Just before injection, the solution is filtered and a definite quantity measured out. The final filtration removes all fragments of thymol, shreds of filter paper and any undissolved material remaining after the dialysis.

The above method applies only to those proteids which I have obtained from normal glands and is given in detail so that no one familiar with the simplest manipulations in physiologic chemistry will have difficulty in following them. In some instances the same procedure has been followed in dealing with the exophthalmic goiter glands.[2] In other cases we have tried to determine how a serum made from the nucleoproteids alone would compare with that made by including the globulins. For this purpose we have prepared nucleoproteids after the same method that was followed in preparing them from the organs of dogs, namely, by repeated precipitation with acetic acid, accompanied by careful washing. The saline extract is prepared in the same manner as with the normal glands, nucleoproteids precipitated by the addition of acetic acid and the precipitate allowed to settle in tall, narrow glass cylinders, washed by decantation until the supernatant fluid is free from proteid and then dissolved by the addition of sodium carbonate to alkaline reaction.

After filtering this solution the nucleoproteid is precipitated by acetic acid and the process of washing repeated. The final product in some instances has been dried at a low temperature in a special apparatus, which has been described elsewhere. Such dried proteid may be kept for an indefinite time without harm. In other instances the nucleoproteid precipitate has been kept in tubes in the refrigerator with the addition of chloroform as an antiseptic. When this proteid is desired for injection it is dissolved by the addition of sodium carbonate to a faint alkaline reaction to litmus. It is of some importance that this reaction be carefully determined. If the injected material is acid in reaction, or if the reaction is too strongly alkaline, a fatal peritonitis is

* From the laboratory of the Huntington Fund for Cancer Research, Department of Experimental Pathology, Cornell Medical College, New York.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Beebe: Jour. of Exper. Medicine, November, 1905.

2. It is a pleasure to record here our obligations to the Drs. Mayo for their courtesy in furnishing us with glands at operation, and also to Dr. L. B. Wilson for his painstaking care in packing them for shipment. Without their assistance it would have been impossible to do much of the work which is now reported.

likely to result. In some instances it happens that the nucleoproteids dissolve very slowly and incompletely on making the suspension alkaline. Such a condition does not prohibit the use of the proteid, however, for I have found that an active serum can be obtained from its injection.

INJECTION OF THE ANIMALS.

Three species of animals have been used for developing the serum, namely, rabbits, dogs and sheep. By far the largest part of the serum has been made in rabbits, but we have been using sheep in the more recent work for experiments with the normal thyroid proteids. For some unexplained reason, dogs have not yielded an efficient serum and their use has been discontinued. It is not possible to predict the activity of a serum which any given animal may produce. The factor of personal idiosyncrasy is noticed here, as in most matters relating to immunity. Serum has been obtained from a large number of rabbits, both for the thyroid experiments and also in continuation of the work on cytotoxins, and it is possible to say as a result of it that the best serum can be produced in a certain type of animal, namely, large buck Belgian hares. The animals should be full grown young adults, weighing from six to eight pounds, and should be well fed and cared for throughout the immunization period. It occasionally happens, however, that an animal in what appears to be prime physical condition and having the best care fails to produce an active serum. Investigators who wish to repeat these experiments should bear these facts in mind.

The injections have been made into the peritoneal cavity. Subcutaneous injections almost invariably result in abscesses. The technic is simple. A small area on the abdomen is shaved and a small needle hole burned in the skin with a hot wire. A short needle with a dull point should be used to avoid puncturing the intestines. The amount of material injected is determined to a considerable extent by the behavior of the rabbit, particularly with respect to the loss in weight. In general, however, the proteid from 10 grams of thyroid is employed for an initial dose in a six-pound rabbit, and the subsequent doses determined by the loss in weight. The sheep, which in the beginning weighed 125, have had injections of 100 cubic centimeters of solution, an amount which represents the proteid from 80 grams of normal human thyroid gland. One of these sheep has been bled four times and has had in total the proteid from more than 700 grams of normal human thyroid gland during the period from December 20 to May 4. With the rabbits, five injections, six to eight days apart, have been given and the animal exsanguinated from the carotid on the eighth day after the last injection. The sheep have been bled after analogous treatment, but quite enough serum can be obtained without exsanguinating the animal. After three additional weekly injections, the animal may be bled again. The treatment is a severe experience, however, and must be given cautiously.

PROPERTIES OF THE SERUM.

At the time of our first publication Dr. Rogers and I had employed no means of testing the activity of the serum except its direct inoculation into patients having exophthalmic goiter and noting the reaction produced. The method of standardizing diphtheria and tetanus antitoxins can not be successfully applied in this case. Later in the work, when I came to the point of testing the agglutinin and precipitin reactions on thyroid fragments and proteid, respectively, it occurred to me that we could use these means for standardizing the serum if it proved that the agglutinating action was in some constant degree parallel to the therapeutic effect. To determine this point I tested many different sera which had been in the laboratory for some time, and which had been thoroughly tested clinically. The results proved to be nearly uniform and were sufficiently promising to lead to a continuation of the study on these lines. In general, it has been found that the more active the agglutinating powers the more marked the local and general reaction following injection. Here again the personal idiosyncrasy of the patient enters, and we find that a serum that agglutinates well produces a vigorous reaction in most patients, but such a result is not invariable. In order to have comparable conditions a definite method has been followed in making these agglutination tests.

Twenty-five grams of normal human thyroid, which have been pulverized in a special machine, are extracted for two hours in 100 c.c. of 0.8 per cent. salt solution; the extract is next strained through gauze and centrifugated for four minutes at uniform speed. Such treatment precipitates the coarser particles firmly in the bottom of the tubes, while the finer fragments remain in looser suspension below the clear extract, but above the coarser impacted mass. The finer particles can be separated with a considerable degree of sharpness from the coarser, and after diluting with 0.8 per cent. salt solution to 250 c.c. and straining through cotton a suspension is obtained which in many ways can be compared to a bacterial emulsion. In the ice box or incubator the fine particles settle very slowly, and in a manner quite different from the agglutinating action which is obtained by the addition of a specific immune serum. In order to have comparable results, it is necessary to follow the method of preparation of the emulsion with some considerable care, for I have found that the time and completeness of the agglutination depend in no small degree on the concentration of the suspension.

As regards the serum, the time required depends on two factors, namely, the potency of the serum and its concentration. The method we have followed is to prepare several tubes containing the same suspension of thyroid cells, to add varying quantities of immune serum and to incubate at 38 C. By noting the length of time required to produce the flocking in various concentrations of serum we can form an idea as to the relative activity. Such tests made under comparable conditions with a large number of sera show that the agglutinating power is in a remarkable degree parallel with the vigor of the local and the constitutional reaction produced by the serum on injection. In this respect, it may differ from bacterial antitoxins in that the latter are not supposed to show any definite relations between their agglutinating and bactericidal and antitoxic properties. I do not wish to be understood as saying that the most active serum will effect a cure in a shorter time than the weaker; there are many other factors involved beside the simple antagonistic action of the serum for a toxin.

Another point of considerable interest is the fact that the serum is highly specific in its agglutinating properties. Suspensions of other human tissues, such as muscle, liver, lymph gland, round-cell sarcoma, are not agglutinated except occasionally by high concentrations after long standing. A serum which in a concentration of 1 to 2 agglutinates thyroid fragments in 30 seconds shows very feeble agglutination of muscle fragments in ten hours. After such a lapse of time it is often diffi-

cult to distinguish flocking from mere settling, but the supernatant fluid is somewhat clearer in the tubes to which the serum has been added.

HEMOLYTIC PROPERTIES.

In the first paper dealing with cytotoxic serum, I stated that there was no reason for believing that the action was due primarily to hemolysis or hemagglutinative properties which were demonstrable in strong concentration in test tube reactions. Histologically, we could find no positive evidence that would lead us to such a conclusion, while experiments *in vitro* showed that in such a concentration as the serum was used *in vivo* no hemolysis or hemagglutination was evident. The therapeutic dose of thyroid serum has never approached nearer than 1/100 of that used in the dog experiments, and it is hardly possible that this is a concentration sufficient for the feeble hemolytic property to show itself. We have no satisfactory evidence, however, that the results of test tube experiments apply in the body, and it is conceivable that a serum may be hemolytic *in vivo* in much more dilute concentrations than are required *in vitro*.

We have had some opportunity to test the matter clinically and have found that the serum treatment generally causes an increase in the per cent. of hemoglobin and number of erythrocytes. Such a result may be due to the general improvement in health and probably not to a direct effect on the blood-forming organs. These clinical results, however, are based on too few cases to be considered final.

THERAPEUTIC EFFECT.

It is a matter of much interest to consider how far our primary objects can be attained by the use of the serum. Our laboratory experiments have shown that it has highly specific action on the thyroid tissues and that it is not markedly hemolytic, but its real specific antitoxic and cytolytic action must be determined by animal experimentation. We have had human subjects for most of this work, and fortunately only one patient on whom the serum has been used has thus far died, so that our conclusions must come from the clinical results. The serum is based on the theory that exophthalmic goiter is a toxemia and that the toxin in question is the thyroglobulin. If we find that administration of the antiserum causes an immediate and striking improvement in the toxic condition we may reasonably infer that it is due to a neutralization of toxin. In a few severe cases we have noticed a striking improvement in all symptoms follow within forty-eight hours. Such, for instance, occurred in Case 7 in Dr. Rogers'[3] report already printed. This patient is now perfectly well. Cases which show such behavior are generally those having an acute development with a soft thyroid gland, which is probably in a condition of simple hypertrophy and contains a large amount of colloid matter with but little relative increase in the number of cells. Such facts are best explained by the toxemia hypothesis, and constitute the only positive experimental evidence we have for the belief that the serum contains a true antitoxin.

It must be stated, however, that only a small proportion of the cases show the striking immediate improvement which is suggested above. The majority show slow gradual improvement which, although positive and undoubted, does not afford such convincing evidence of antitoxic action. The majority of cases which we have treated have been of the slow developing chronic rather than the acute type. The gland in these cases is more cellular and presumably the cytotoxic element in the serum, in the comparatively feeble doses in which it is administered, can not act with sufficient vigor to cause immediate and rapid diminution in the gland. More rapid destruction might possibly result in a dangerous acute toxemia from the decomposition products of the gland. It is a well-known fact that manipulation or massage of the gland is likely to be followed by an exacerbation of symptoms. It would not be desirable to produce the same class of lesions in the thyroid that were found in the livers and kidneys of the dogs treated with specific cytotoxins, but we do wish to inhibit the gland and to bring its activities back to the normal. Accordingly, a much smaller dose should be used. I confess that I feel much less sure of my ground in dealing with the cytolysin than I do with the antitoxin idea.

There is, however, some evidence which should not be ignored. My previous work with dog organs demonstrates that it is possible to develop highly specific cytotoxic serum from nucleoproteids, and, since these proteids from the thyroid gland are included in the injection, a similar property of the serum should be produced as in the former case. I have had some indications that a partial suppression of kidney function may be produced before we have positive evidence of a kidney lesion resulting from the administration of a nephrotoxin.

Aside from this, I know of no facts which show that inhibition of function may precede lesion. We do not know to what extent it is necessary to injure an organ by such means in order to inhibit its function. It is a purely hypothetical assumption, but it may be easier to inhibit a tissue which is maintained in a habit of excessive unstable activity than it is to affect one in a stable physiologic condition. For instance, the antipyretics reduce fevers, but have little or no effect on normal temperature. A pathologic and a physiologic condition are not precisely comparable. The main fact, however, is that the administration of the serum causes a decrease in the size of the gland and in a few cases it has been restored to apparently normal size. A vicious habit has somehow been broken and it has seemed to me reasonable to ascribe the result in part to the cytolysin properties of the serum.

There is some advantage in having the antithyroid serum developed in two animal species. In some cases the sheep serum, which is developed from normal glands, has been given at weekly intervals for from eight to ten weeks in chronic cases. It was efficient in suppressing the symptoms and caused much improvement, but at the end of this period there were exacerbations which the sheep serum, even in increased doses, would no longer control, although in the beginning it had proved perfectly satisfactory. The serum no longer caused a local reaction, although this, too, had at first been quite pronounced. It seemed possible that the sheep serum had been continued for so long a period that the patient had developed an anti-antitoxin and was, therefore, to a very large extent immune. When rabbit serum, which gave a weaker agglutinin reaction, was administered to these patients the symptoms were promptly controlled. The immunity to the sheep serum did not in any way interfere with the biologically different antitoxin. The two diseases in which serum has been employed most, diphtheria and tetanus, are both acute and accordingly such a possibility as the formation of an anti-antitoxin

3. Rogers: THE JOURNAL A. M. A., February, 1906, p. 487.

has needed no consideration. In those chronic cases of exophthalmos in which serum treatment must be long continued, however, it will probably be necessary to change the biologic character of the serum occasionally in order to prevent such interference.

SERUM FROM THE NORMAL AND THAT FROM THE PATHOLOGIC GLAND.

The results reported in the first communication were all obtained by the administration of serum developed from the pathologic gland. Our more recent experiments have demonstrated that it is possible to develop a serum of high therapeutic efficiency from proteids of the normal gland, and it is hardly necessary to add that these results are of considerable interest to both the physiologist and the clinician. For if we had found that serum from the normal gland was quite inefficient it would indicate the presence of a special toxin in the pathologic gland. It would mean not simply excess of function, but rather a complete change in the character of the secretory activity.

Our results are in accord with the results of chemical investigation, for, as I have stated previously, such study has not revealed any special toxin. It is, indeed, Oswald's[4] belief that the exophthalmic goiter thyroglobulin is poorer in iodin than the normal secretion, but this does not indicate a radical difference in the remaining portion of the proteid. There is a very wide variation in the amount of iodin which the normal gland contains, and it is hardly probable that the iodin variations which Oswald has found in the exophthalmic goiter secretion would so alter the proteid molecule from that of the normal as to render the latter unfit to serve in the immunizing process. The biologic character which is of the greatest moment in the process of immunity is probably given by the remaining portions of the proteid rather than by the iodin group, so that I am of the opinion that the exact iodin content is a matter of small importance for our purposes.

The most active serum which I have thus far developed has come from the proteids of certain glands removed at operations. The activity of this serum has been expressed in its agglutinin reactions, the local and constitutional reaction on injection, and its therapeutic effect. In all three phases it has exhibited the highest potency of any serum yet produced, but I am not convinced that its action shows a difference in quality rather than intensity from that of normal glands. There are reasons which, I believe, explain the particularly good quality of this serum, and these are not dependent directly on its being developed from exophthalmic goiter glands. The glands were removed at operation and were received at the laboratory in perfectly fresh condition and consequently the proteids derived therefrom had suffered little by autolysis; second, the serum was developed in young adult Belgian buck hares which stood the injection very well, and, as I found, this is the particular type of animal that gives the best serum. The normal glands from which the serum is made are obtained at autopsy, and this fact makes it impossible to get them in a fresh condition. Practically all our normal serum has been developed in sheep and these animals do not produce so active a product as the hares. This latter statement holds true, also, for the cytotoxins produced from dog organs. We have had striking and immediate improvement follow the administration of both the normal and the pathologic serum and, in my opinion, the facts do not warrant the conclusion that there is any radical difference between the two. This question is one of the highest complexity and can only be settled by long-continued experimentation on a large number of patients. We must take into consideration the great difference in reaction which patients show to the same serum as well as the considerable differences in the quality of the serum produced by the same class of animals under similar treatment.

If the hypothesis regarding the antitoxic and cytotoxic property and their dependence on the injection of thyroglobulin and nucleoproteid, respectively, is correct, then we should find it advisable to vary the activity of the serum in respect to these two factors in order to meet the indications in the various types of cases. Experiments of this sort are now under way, but we can not as yet make any statement of results. The hypothesis may break at any point and it is not safe to make it too extensive.

It is of interest to consider in this connection the condition of the gland from the one fatal case treated with serum. The case was one of long standing; the patient, a man, had had the disease for ten years and was in extreme condition when admitted to the hospital. During his period of treatment, which lasted for six weeks, he made good general improvement in all symptoms. The circumference of his neck diminished three inches during this time. His death occurred a few weeks after leaving the hospital, and at the postmortem the gland was found to have a tough, beefy consistency quite different from the soft condition on entrance to the hospital. Histologic section showed the gland to be very cellular, practically without colloid, and in many places the cells were in a partially atrophic condition, which suggested the beginning of the changes characteristic of myxedema. We have no section of the gland showing the condition at the beginning of treatment, but the change in the consistence and size of the gland, together with the postmortem condition, favor the belief that the gland at first had considerable colloid which disappeared during the course of treatment. In this respect the result agrees with the conditions found by many investigators in the thyroid glands of animals treated with cytolysin serum. The patient was treated with serum made from the normal glands only. Since the above was written we have examined the gland from a second fatal case after serum treatment and have found an extensive acute degeneration of the gland. The patient received small doses of serum at frequent intervals. The gland very rapidly diminished in size and the patient died on the fourth day after beginning treatment.

CONCLUSIONS.

When all the conditions are considered I believe it is fair to conclude that the serum is an agent of considerable value in the medical treatment of exophthalmic goiter. It has been used in all manner of cases in which it was possible to make a diagnosis, and in some cases in which the diagnosis was doubtful. Only a comparatively small percentage of these have been of recent development. A small percentage of trials has resulted in failure, a much larger number in improvement, while an encouraging number of individuals have been completely cured. In making up the statistics which are given here, all the cases of which we have any record have been included. These have covered an area from Maine to California, and in many instances the physician in charge of the case has had no other experience with the

4. Oswald: Hofmeister's Beiträge, 1902, vol. ii, p. 545.

disease but the one case immediately under treatment. A number of the patients have begun treatment so recently that it is not possible to make any safe conclusion of the outcome. The number of instances of cure and improvement are so large that they can not be ascribed to coincidence, and under favorable conditions I believe much can be accomplished by careful serum therapy.

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THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.*

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The treatment of exophthalmic goiter by operation is a comparatively recent procedure and its usefulness as a means of relieving this serious disease is not yet conceded by all. In many cases operation is contraindicated, while in others operative measures result often in complete cure, or almost always in improvement.

The cause of this disease is not yet sufficiently established, but that many cases are caused by an excess of thyroid tissues is self-evident. Yet in some cases (10 per cent.) it is said there is no enlargement of the thyroid and in many the enlargement is not marked. In some cases, again, enlargement of the thyroid is a late symptom in the disease, while in others the enlargement precedes the other symptoms by months and sometimes years. Goiter has been known to exist for years without producing any marked symptoms of this disease and then they appear. The parenchymatous goiter may be present for some time without giving rise to any symptoms, and the enlargement of the thyroid may only be accidentally noticed, by feeling the collar band too tight, or observing a fulness of the neck when looking in a mirror. Some attribute exophthalmic goiter to atrophy of the parathyroids or their infiltration by fat. In my cases where the parathyroids had been removed with the thyroid they have been found perfectly normal in appearance and not infiltrated or atrophied.

The idea that exophthalmic goiter is due to a disorder of the sympathetic and vagus is now abandoned by almost all, and the operation of excision of the sympathetic ganglia and trunk in the neck for the relief of this disease may now be looked on as an obsolete operation. That the nervous system is involved in the affection goes without saying, but the cause is not in the nervous system, but in the thyroid gland, and the profound effect produced on the nervous system is brought about "by the action of certain substances which find their way into the circulation as a result of deranged function of the thyroid gland"; overactivity of the thyroid, or the secretion of an enlarged thyroid produces too much oxidizing material.

Therefore, the probable cause of exophthalmic goiter is hyperactivity and hypersecretion of the thyroid, and the same condition may be produced by artificially feeding an individual with thyroid extract. It is certain that many patients are cured by the removal of the excess of thyroid tissue, and the natural inference is that the excess of thyroid tissue causes the symptoms in those cases in which this organ is enlarged. It is possible that there may be other causes (and in this connection the thymus can not be ignored) in the production of complex symptoms of this disease, for these symptoms may exist without special enlargement of the thyroid, but where there is enlargement the removal of a sufficient quantity of the gland tends to the cure or relief of the symptoms.

Dr. H. MacKenzie[1] says: "If we could assure ourselves that the disease is nothing more or less than a hypertrophy of the thyroid gland, it would seem that the most rational method of treatment is to reduce the enlarged gland to something like normal proportions by surgical means. But we can not ignore the part obviously played by the thymus in this disease. . . . Unfortunately, the operation is, even in the hands of most skilled surgeons, a dangerous one, and the risks are greatest in the class of cases which respond least to medical treatment."

Partial thyroidectomy does not always cure, perhaps because not enough of the gland is taken away. Kocher advocates removing three-quarters or more of the gland and the ligation of three arteries. Ligation of the thyroid arteries is as difficult as thyroidectomy, but less likely to cure and less dangerous. Curtis recommends it as a preliminary operation to partial thyroidectomy and as a palliative operation. Schwyzer, of St. Paul, reports four cases of well-marked exophthalmic goiter cured by ligation of the thyroid arteries.

B. Farquhar Curtis[2] is still a mild advocate of sympathectomy, but latterly he has been practicing thyroidectomy, and in one case did both operations with good results. Jaboulay's operation of exothyropexy is now never practiced, and in fact Jaboulay himself gave it up for section of the cervical sympathetic. As many deaths occur, strange to say, after sympathectomy as after thyroidectomy. It has been thought that deaths following operation in this disease are due to too much absorption of thyroid secretion, owing to the rough handling of the gland. But in the operation of sympathectomy there is no rough handling. It is well known that individuals with exophthalmic goiter stand operations badly and cases are reported of deaths occurring from so-called thyroidism in persons suffering from this disease after operation on distant parts, such as the pelvis or breast. The cause of death in these cases is almost as obscure as the cause of the disease itself, which may sometimes come on after severe fright or anxiety, and these causes in a well-developed case of exophthalmic goiter are well known to lead to an exacerbation of the symptoms.

THE CLASS OF CASES SUITABLE FOR OPERATION.

I am of the opinion that early operations are the safest and that the class of cases most likely to benefit are not the most severe ones, but those in which the gland is more enlarged on one side than another, in which, in fact, there is a more definite tumor formation, in which the gland is not excessively vascular, and in which the enlargement has preceded the symptoms of Graves' disease by months and perhaps years. These might be called cases of secondary or acquired goiter. Also in those early cases of enlarged thyroid with a mild form of Graves' disease, in which the gland is soft, vascular, and evenly enlarged throughout, here operations are usually most satisfactory, the after-results being decidedly good. The cases in which operation should be avoided are those of large vascular thyroids in which there are definite febrile exacerbations, excessive tachycardia, "with acute dilatation of the heart, precordial distress, gastric and abdominal pain, vomiting and

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. British Med. Jour., Oct., 28, 1905.
2. Annals of Surgery, March, 1906.

diarrhea, sleeplessness, perspirations, sense of suffocation, great restlessness, edema of the feet—in fact, all the symptoms of toxemia due to thyroidism." (Thompson.)

It is singular that most physicians are against operative measures, or only consent in a half-hearted way to their occasional employment. It is perhaps because they hand over only the desperate cases to the surgeon, after all medical measures have proved futile. Hector MacKenzie[1] says: "On the whole, I consider the risk attending thyroidectomy too great to justify the operation save in exceptional circumstances." Eulenberg is opposed to operation, and Dr. George R. Murray[2] does not mention it at all. Nearly all the recent medical writers on exophthalmic goiter condemn surgical procedures as being too dangerous and not always successful (Collins, Robins, S. Smith).

MORTALITY FOLLOWING OPERATIONS.

A good deal depends on the kind of case operated on, and hence statistics are not of great value. Huntington[4] had one death in nine patients operated on. Ransohoff[5] reports six cases without any fatality. Curtis[6] reported fourteen cases of sympathectomy and thyroidectomy with four deaths, and mentions 136 patients operated on by surgeons, including Kocher, Schultz and Mayo, with 17 deaths. A large mortality, but no doubt in properly selected cases this would be much lower. Kocher's report of 59 patients operated on showed: 76 per cent., cured; 14 per cent., improved; 3.8 per cent., slightly improved; 6.7 per cent., died.

At the German Congress for Internal Medicine, held in April, Kocher reported having operated on 167 cases, with 9 deaths and 72 per cent. of cures. Friedheim, of Hamburg, out of 20 cases, had 15 patients cured and 5 improved.

The diseases having the symptoms complex of exophthalmic goiter, then, may be considered to be of two kinds: One in which the patient is extremely nervous and sleepless, has tachycardia, exophthalmos, pyrexia, tremor and edema of extremities, diarrhea and frequent sweatings, emaciation, and with a large, diffuse vascular thyroid usually not more enlarged on one side than the other, and which has not preceded the nervous symptoms, but has come on with the other symptoms indicative of this disease. This patient may have a dilated heart and perhaps endocarditis if the disease is of some standing; in such cases I should not now operate.

Patients in the second class, although ultimately not distinguishable from the former in symptoms, have had goiter for some years, which is more pronounced on one side than the other, and there is nervousness, excitability, difficult respiration, tachycardia, exophthalmos, tremors, sweatings and moderate loss of flesh. These patients are suitable for operation, and when the overgrowth of thyroid is removed the patient ultimately gets quite well. At first the pulse becomes quieter, nervousness is less, the patient increases in weight and generally improves, the exophthalmos, however, diminishes very slowly. Some of these patients operated on nine or ten years ago still remain quite well, and in this class of cases I have had no death following operation, though in some I have had some very alarming symptoms.

Huntington says: "We can not escape the conviction that general anesthesia is in a very large proportion of cases seriously at fault. There is no difference of opinion among operators as to the impropriety of general anesthesia in this relation and especially in advanced cases." Now, I have always used general anesthesia, latterly ether and chloroform mixed, and have had no bad results. In the two cases of death the patients perfectly recovered from the anesthesia and died after some time—eight hours in one case and two days in the other. The danger is always great in operation in a severe case of exophthalmic goiter, but not greater probably than the mortality would be if the patient were treated by medical means only. In selected cases this danger ought not to be very great, and with more extended experience in the cases proper for operation and if the operation is performed in the early stages, in the future I am sure the results will be much better.

REPORT OF CASES.

In the seventeen cases I report there were three deaths, all in desperate cases; nine patients were completely cured; three much improved; one relapsed and one was lost sight of, though improvement was noticed immediately after operation. Four cases were of the cysticocolloid variety; eleven colloid adenoma, and two pure hyperplasia without as much colloid as in the normal gland.

In two cases there was no exophthalmos, though the other symptoms were marked. In two the exophthalmos was slight, and in thirteen it was well marked. The patients' ages ranged from 14 to 53 years, and the average was 28.80. There were sixteen females and one male. All the patients demanded operation for the relief of their distressing symptoms, and in none was the operation insisted on. In every case the dangers were distinctly placed before the patient and her friends.

The following is a synopsis of the seventeen cases:

CASE 1.—Mrs. H., aged 35, telegraph operator, always lived in Canada.

History.—Seven years ago she first noticed enlargement of the thyroid, which increased slowly until six months ago, when the gland began to grow rapidly and nervous symptoms were much increased.

Examination.—She entered the hospital for operation Dec. 16, 1894. At that time she had a pulse of 120, tremors, great excitability and loss of flesh with exophthalmos. She had been forced to give up her occupation on account of nervousness, and had also of late experienced some difficulty in breathing. There was enlargement of the thyroid, more on left side, and many hard nodules were felt in this lobe.

Treatment and Result.—The left half of the gland was removed with much benefit. Tumor after removal was found to consist of large vesicles filled with colloid and lined with flattened epithelium. The patient resumed her occupation, had little tachycardia and much diminished nervousness. Several years later I saw her again, when many of the old symptoms had returned, but she refused further surgical interference.

CASE 2.—Miss L., aged 20, was sent to me by Dr. Cornell, of Brockville, Ontario.

History.—She has had enlargement of the thyroid for some years; both sides are enlarged and have the appearance of localized tumors. A short time after she noticed the increased size of the gland, nervous symptoms developed, tachycardia, tremors, etc. These symptoms increased on exertion and her pulse was almost uncountable. Then came exophthalmos with persistent pyrexia and on exertion great difficulty in breathing.

Examination.—When I saw her in 1896 she was a pale, anemic girl, very thin, with slight exophthalmos and a rapid pulse, 140 to 200. She was excessively nervous, had tremors, some fever and edema of the extremities, and was much emaciated. Both lobes of the gland were considerably enlarged. The enlargement was not of the soft, diffluent character usually seen in Graves' disease, but was hard and seemed to be

3. Medico-Chirurgical Society Transactions, 1903, London, Eng.
4. Transactions of the American Surgical Association, 1905.
5. Lancet-Clinic, June, 1905.
6. Annals of Surgery, March, 1905.

a growth well defined on each side and the size of a small orange.

Operation.—Nov. 18, 1896, I enucleated from each lobe by separate incision a solid tumor, the size of a tangarine orange, full of colloid matter.

Result.—The patient rapidly recovered and was sent home in ten days. Two years after she was perfectly well and had no signs of exophthalmos or tachycardia; in fact, all the symptoms for which she consulted me had disappeared. I heard from her in March, 1906, and she still remains perfectly well and has no signs of goiter or Graves' disease. This case was one of my most successful.

CASE 3.—Miss McC., aged 24, always lived in Montreal.

History and Examination.—She had a well-marked enlargement of the thyroid, more on the right side. It seemed to be a large solid tumor and commenced three years previously as a small nodule in the middle line of the neck and was supposed to be due to pressure of a brooch. Nervous symptoms appeared with the tumor. She was extremely nervous, had tachycardia (pulse 120), tremors, went upstairs with difficulty, sweated easily, had a slight cough; legs were edematous; she had lost much flesh and had exophthalmos.

Operation and Result.—Oct. 8, 1901, half the gland was removed and the patient made a good recovery. When last seen, three years after the operation, she was attending to her business as a milliner and was quite well, and though at times very nervous she had gained much flesh and the palpitation and other symptoms had disappeared. I have heard lately (April, 1906) that she still remains quite well. The gland was cystico-colloid with hyperplasia.

CASE 4.—Bridget McC., aged 16, had enlarged thyroid for four years.

History and Examination.—The enlargement was general, but not very soft or vascular. She was extremely nervous, had tachycardia, pulse 120, tremors, loss of flesh and slight exophthalmos. Two sisters and a brother have enlarged thyroids.

Operation.—At operation the whole thyroid was removed, except a small portion over the trachea.

Result.—The patient rapidly recovered and lost in the course of a few months all nervous symptoms, and when last seen, four years later, was stout, healthy, with no nervous symptoms, and following the occupation of a domestic servant.

CASE 5.—Jennie K., aged 24, since she was 15 years of age had enlargement of the thyroid.

History.—It commenced as a small round growth in the right lobe and had continued to grow ever since. For some years, owing to tachycardia and breathlessness, she had not been able to walk upstairs or to walk any distance on the level. For some years also she had had tremors and exophthalmos. The tumor was of large size, smooth, soft and not very vascular. The patient had become much thinner of late.

Operation.—Jan. 27, 1899, the tumor was enucleated. It was cystico-colloid. After operation there was a temperature of 104 F. and an uncountable pulse, with excessive nervousness. The discharges from the wound were sterile; on removing the packing and the evacuation of a large quantity of clear serum the symptoms subsided.

Result.—She was discharged from the hospital much improved, the tachycardia was less, she had no tremors and was altogether better. Six months later she wrote me that her heart had ceased to palpitate and that she was gaining flesh rapidly. In June, 1903, three and a half years after operation, I saw her again and she was looking very well; there was no trace of enlarged thyroid, but she still had slight exophthalmos and was occasionally nervous. I have heard since that she is married.

CASE 6.—Miss S., aged 40, first noticed a small swelling on the left side of the neck ten years ago, which has been growing ever since.

Examination.—She had marked tachycardia, tremors, breathlessness on exertion, exophthalmos, and was emaciated and excessively nervous; pulse ranged from 108 to 110. The tumor was of considerable size and confined to the left lobe and isthmus.

Operation.—She was operated on Feb. 23, 1899.

Result.—For a time there was no improvement, but after six months there was less tremor and nervousness. Six years after I heard she was very well, but still has slight exophthalmos.

CASE 7.—Miss M., aged 29.

History.—Two years ago her neck began to enlarge on the right side and the swelling gradually increased in size to that of a tangarine orange. She had tachycardia (pulse 120 to 130), tremors, palpitations, breathlessness and hacking cough.

Operation.—August, 1901, operation was uneventful; the right lobe was removed. The patient was much improved by operation and the pulse soon after came down to 90. I have been unable to trace this patient.

CASE 8.—Alice H., aged 22, has had an enlarged thyroid all her life; up to three years ago she lived in Ireland.

History.—Latterly the gland has enlarged rapidly and nervous symptoms have been present for the past two years; the enlargement is more on the right side, smooth and vascular, pulsating. The pulse ranged from 100 to 120, the eyes were prominent; there were tremors, edema of legs, palpitation, insomnia, and latterly she has lost much weight.

Operation.—In May, 1904, the right half of the thyroid and isthmus were removed. Symptoms of thyroidism developed after operation; there were high temperature, great restlessness and uncountable pulse. These symptoms subsided at the end of a week and she was discharged at the end of two weeks.

Result.—Three months later I saw her and she had gained over 20 pounds in weight; the pulse was between 70 and 80, and she had resumed her occupation of nurse. Since then she has married and is now very well.

CASE 9.—W. M. L., aged 44, had had an enlargement of the right lobe of the thyroid for some seven years.

History.—Seven months before consulting me nervous symptoms commenced to appear with attacks of dyspnea, dry cough, loss of weight, and "protrusion of the eyes." He also had attacks of palpitation and had tremors. Pulse ranged from 110 to 120.

Examination.—A marked enlargement of the right side of the thyroid was found which was soft, diffluent and pulsating. The trachea was displaced to the left. There was a good deal of exophthalmos, more on the right side, with tremors and a pulse of 112.

Operation.—Aug. 9, 1904, the right half of the thyroid and the isthmus were removed. After operation there was great restlessness, rapid pulse, and high temperature, with insomnia; eight days after there was much less nervousness and less tremor.

Result.—Six weeks after he left the hospital he reported himself much better.

CASE 10.—Mrs. P., aged 34, was sent to me by Dr. Alguire, Cornwall, Ont.

History.—For the last twelve years she had noticed the thyroid enlarging; it came on soon after her marriage and especially grew during her last two pregnancies; her mother had enlarged thyroid and two of her sisters have it now, one of whom I have since seen has well-marked Graves' disease. The patient had great difficulty in breathing, but none in swallowing. She had tachycardia, pulse 134, exophthalmos, attacks of palpitation, and was very irritable. She had also lost flesh. She had a short, dry cough and of late her voice had altered.

Examination.—Paralysis of the left cord was found. The growth, which was a very large one, commenced on the right side and this is yet the largest part.

Operation.—Nov. 22, 1905, the whole gland was removed with the exception of a small part of the right lobe over the trachea. The trachea was found to be scabbard shaped. After operation, which was a difficult one, hoarseness and dysphagia followed, and then an attack of jaundice ensued, which had not completely disappeared when she left the hospital fourteen days later. With the jaundice her pulse fell to 76.

Result.—I heard from this patient a year after operation and she reported very slow recovery and still had some discomfort with dyspnea, but was gradually improving and had gained flesh. There were no signs of myxedema.

CASE 11.—Mrs. H., aged 53, had had enlargement of the thyroid for some years.

History.—She had become so very nervous and excitable that she insisted on operation. She was a thin, excitable woman, with a pulse ranging from 125 to 135, tremors, insomnia, and slight exophthalmos. On each side there was a much enlarged, soft, diffluent and vascular gland; the arteries were very atheromatous.

Operation.—Oct. 19, 1901. Ether anesthesia was used. The patient, on coming to the operating table, had a pulse of 200. The whole gland was removed. The patient stood the operation well and recovered perfectly from the anesthesia, but that evening the pulse became uncountable, the temperature rose rapidly, she was very restless, and died the next morning, evidently from thyroidism.

Case 12.—Mrs. C., aged 30, had had a "full neck" ever since she can remember.

History.—Four months before consulting me, after the birth of her last child, the right lobe began to enlarge and severe nervous symptoms began to develop.

Examination.—When I first saw her I found a small, very excitable, emaciated woman with excessively prominent eyes, and with a pulse of from 140 to 150, and well marked tremors, she was also sleepless and had diarrhea and sweatings. Her husband said that at times she was quite maniacal. She had an enlarged neck, measuring 35 cm., the enlargement greater on the right side. The gland was soft, very vascular, diffluent and pulsating.

Treatment.—I first gave her potassium iodid in ten grain doses. This seemed to have the effect of hardening the gland and she was less nervous, but soon tired of it and refused to take any more. I then tried *x*-rays; six exposures caused diminution of the tumor from a circumference of 35 cm. to 32.5 cm., but there was no perceptible effect on the nervous symptoms. Operation was demanded, and, although I was not very eager to comply, I took her into hospital and kept her in bed for a week with an ice bag on the heart. I had much difficulty in keeping her in bed as she was at times violent and almost maniacal, and seemed in great fear. The left cord was partially paralyzed.

Operation.—Jan. 23, 1906, she was operated on. There was much difficulty in giving the anesthetic, but when she became unconscious she was quiet and her pulse fell from 200 to 140. An ether and chloroform mixture was the anesthetic. The operation was without incident, the right lobe and isthmus were removed and the patient recovered completely from the anesthetic and recognized her friends.

Result.—Towards evening she became excited, the pulse uncountable, respiration difficult, and the temperature rose to 104 F. She became quite maniacal and then subsided into a stupor and died during the night. Examination of the removed lobe showed some hyperplasia of the gland and it was found that the parathyroid had also been removed, and on examination was found to be quite normal.

Case 13.—Miss D., aged 23, for some years had had an enlargement of the thyroid which was soft and vascular.

History.—She has had frequent attacks of palpitation, tachycardia and excessive nervousness, which made her life miserable. She could do nothing and was getting worse. She had lost flesh. There was no exophthalmos and no tremors, although Graefe's sign was present.

Operation.—Dec. 2, 1898, the right half of the thyroid and the isthmus were removed. She had some symptoms of thyroidism after operation and perspired most profusely for some days.

Result.—At first there was no improvement but a year afterwards the patient said she was better than she had been for years and that the left half of the gland had diminished considerably. It was a colloid goiter with hyperplasia.

Case 14.—M. McL., aged 19,

History.—For two years she had noticed enlargement of the neck and latterly had been very nervous, breathless, and had suffered from palpitation; the eyes also had become prominent.

Examination.—A moderate enlargement of the thyroid was seen more on the left side; it was soft and vascular. The patient was excessively nervous, had a moderate degree of exophthalmos, and some breathlessness; pulse ranged 110 to 120.

Operation.—June 17, 1895, the left lobe and isthmus were removed. The left lobe contained an adenomatous growth.

Result.—The patient recovered well from the operation and left the hospital on the tenth day. She was much improved, pulse had come down below 100, and the nervousness was less. I heard of her some months after and she reported that she was quite well, had no tachycardia, and was much less nervous, but the exophthalmos still persisted.

[These notes were taken from my private operation book and from a short account on the back of a photograph. The complete hospital case record had been borrowed and never returned, and could not be found.]

These fourteen patients are all on whom I have operated with sufficient severity of symptoms to call the condition Graves' disease. Many patients have been operated on who had difficulty of breathing, rapid pulse, and some with a considerable degree of nervousness, but, although there were some of the symptoms of Graves' disease, yet they were not severe enough to be classed as exophthalmic goiter. Of the 14 patients operated on twelve patients have been benefited by operation, one has relapsed and one has been lost sight of; the deaths have been two, both in very advanced cases. The next three cases I mention shortly are patients who have been operated on by colleagues in the hospital, who have kindly consented to allow me to make use of them.

Case 15.—C. G., aged 19, had had gradual enlargement of the thyroid for five years.

History.—She had lost weight, was excessively nervous, had frequent attacks of palpitation, pulse 140, tremors, and marked exophthalmos.

Examination.—She had enlargement of the heart, a systolic murmur at the apex, and an accentuated second pulmonic sound. The left side of the thyroid was larger than the right, and the whole gland was much enlarged, soft and pulsating, except on the right side where the enlargement was apparently cystic.

Operation.—January, 1897, the patient was operated on; she lost considerable blood and never recovered consciousness after the operation. The autopsy showed a greatly enlarged thymus and excessive enlargement of both suprarenals.

Case 16.—E. B., aged 14, had been excessively nervous for two years and had had profuse sweats.

History.—For six months the voice had been affected and she had had difficulty in swallowing and excessive restlessness and periods of mental depression. Although there has been slight enlargement of the thyroid for two years, it had increased greatly in size during the past three months. Pulse ranged from 120 to 130. Tremors were well marked and there was great dyspnea on exertion; she had marked exophthalmos.

Operation.—The right half of the thyroid was removed in November, 1904, under local anesthesia, and the patient did well.

Result.—When last heard of some months after operation she had improved greatly and was much less nervous, and the pulse was 80 to 100.

Case 17.—Mrs. G., aged 33, had noticed increasing enlargement of the thyroid for the past sixteen months, and especially during the last three months.

Examination.—She had well-marked exophthalmos, tachycardia (pulse 120), tremors, great nervousness and excitability. Both lobes of the thyroid were moderately enlarged, the right being more prominent; the gland was firm, elastic, not very vascular, and of uniform consistence.

Operation.—In February, 1905, excision of the right lobe was performed under cocain and ether and the patient rapidly recovered, going out in eight days, with much better pulse (under 100), and not nearly so nervous. In this case there was very little colloid, there was hyperplasia of the gland with very small alveoli.

In most cases hyperplasia of the gland was found, in some the colloid matter was much more abundant than

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in others; in some the vesicles were smaller, and in others there was the folding in of the epithelium as described by MacCallum. I have not given the description of the microscopic sections, but have been content to make a diagnosis from the clinical symptoms which are complex. I do not yet believe that we can always tell by microscopic examination whether or not the condition is one of Graves' disease, for in many cases in which there were no symptoms, such as tachycardia, nervousness, etc., well-marked hyperplasia of the gland was found.

This being a surgical paper, I have not mentioned the medical treatment. The cases I have related had all been treated medically before being sent to me. Of the serum treatment I have no experience nor have I seen cases treated in this way, though I have heard that good results have been obtained in many instances.

DISCUSSION.

ON PAPERS OF DRS. ROGERS, BEEBE AND SHEPHERD.

DR. L. W. BACON, JR., New Haven, Conn., is convinced that a little more careful analysis of the symptoms presented would enable the surgeon to elect among several possible surgical procedures the one best suited for the particular patient. In cases of what may be called the "sympathetic type," for instance, where on account of such symptoms as a unilateral exophthalmos it is difficult to ascribe the symptoms to hyperthyroidism or to any other form of a general intoxication, it is very reasonable to consider the possible advantages of the so-called sympathectomy over thyroidectomy. There is another class of cases in which the irregularity of the symptoms, and the extreme predominance of one symptom over another indicates perversion rather than mere excess of thyroid function; in these cases thyroidectomy is little likely to do good. In some of these cases there is a concomitant localized myxedema, and here Dr. Bacon regards thyroidectomy as distinctly contraindicated. When, as in some cases, the administration of thyroid extract is followed by an amelioration of the symptoms, this is an indication of perverted, rather than of excessive thyroid function, and in such cases thyroidectomy should be recommended with great caution.

The general conclusion Dr. Bacon has reached in the matter is that the more typical the case of exophthalmic goiter the more clear is the indication for thyroidectomy. Atypical cases may demand some other operation, or may, perhaps, be best treated by non-surgical means. Care should always be observed in advising any kind of an operation in these cases, and if on testing the case with thyroid extract it is found that this produces an amelioration of the symptoms, and likewise, in that certain small percentage of cases where the disease apparently is not due to a distinct intoxication, abstension from thyroidectomy should be the rule. For, however logical a means this operation may offer for the reduction of an excessive secretion, for the correction of a function perverted in quality its logic is less evident, and for the cure of those patients who may present many of the symptoms of exophthalmic goiter, but whose troubles are dependent on organic changes in the central nervous system, thyroidectomy is probably worse than useless. The line of progress in the surgical treatment of exophthalmic goiter will lie in the more careful analysis of the cases.

DR. H. M. S. DAWBARN, New York, believes that in view of the brilliant results obtained by Drs. Rogers and Beebe, surgeons are not justified in attempting any surgical intervention without first trying the serum treatment. He has used the ligation method instead of partial thyroidectomy in four instances, with the greatest benefit. The object of the removal of a portion of the thyroid is to get rid of the excess of thyroidin thrown out in excess by the gland. If the same results can be accomplished by shrinkage of the thyroid gland, simply through tying off all the named thyroid arteries, two great benefits are attained. First, there is avoided the risk of removing a part of the gland, with its occasional consequent rise of temperature and sudden death; the ligation method being, on the other hand, practically devoid of mortality. Second, since the majority of these cases occur in women, the resulting appearance is important to consider. The removal of the thyroid on one side leaves a depression, whereas there continues a bulging on the other side, there thus being a lack of symmetry and never a very grateful patient. By the method Dr. Dawbarn is advocating, there is nothing worse than a delicate linear scar running down the neck on each side. Inasmuch as there is no case on record in which ligation of both the superior and inferior thyroid arteries, and also any other artery that may be found going to the gland, has been followed by gangrene of the gland, there can be no objection to tying all of these vessels. There will remain anomalous vessels enough for nourishment. Dr. Dawbarn ties them on both sides at the same sitting and, in his experience, they have been so very large that they can be found without the least difficulty. The resulting deformity is almost *nil*. That being the case, it seems that inasmuch as in each instance there has been very rapid and permanent shrinkage of the thyroid, and since it is so very safe a plan and does not necessitate handling of the gland, it is the thing to try rather than any more severe and mutilating method.

DR. A. J. OCHSNER, Chicago, said that there are four distinct dangers connected with anesthesia in operation for exophthalmic goiter. 1. There is the danger of the anesthetic itself. These patients, unless anesthetized with great care, are very liable to get into trouble. If the anesthetist is at all careless the patient may be so thoroughly asleep that it will be difficult or impossible to arouse him. 2. There is the danger of producing a toxemia incident to the possibility of violently handling the enlarged gland while the patient is asleep. He can not at that time object to any violent treatment, and it is possible to squeeze the thyroid juices into the circulation. The result is high temperature and sometimes a fatal issue. 3. There is the danger of injuring the recurrent laryngeal nerve, which does not have to be reckoned with when the patient is awake, because the moment it is picked up the patient becomes hoarse. 4. And, finally, there is the danger of infection through the breath of the patient, the patient breathing and infecting his own thyroid through his breath.

Following a suggestion made by Dr. Crile some years ago Dr. Ochsner avoids all these troubles by thoroughly anesthetizing the patient with ether while he is in the horizontal position, then covering the mouth and nose with about ten thicknesses of aseptic gauze, then elevating the head of the patient by placing him in the inverted Trendelenburg position and utilizing the resulting anemia, in place of the anesthetic, for the remainder of the operation. It is always possible to complete the operation without giving any more of the anesthetic, and by the time that the recurrent laryngeal nerve is reached in the course of the operation the patient will be partly out of the anesthesia and able to speak so that he can warn the operator of that danger, which can also be avoided in that way. In fact, so can all the dangers that depend on the anesthetic, and there is the advantage of having the patient quiet so that the operation can be completed very rapidly.

The operation which Dr. Ochsner has performed on many patients has been the following: He removes the middle and larger lobe and ligates the inferior thyroid artery and vein on both sides, which reduces the size of the thyroid on the opposite side, so that no deformity results. One case was operated on as long as fourteen years ago. The patient is still in excellent condition. Dr. Oschner thinks that the serum treatment is still in the experimental stage. If, however, it proves to be useful, then the operative treatment must be reserved for those cases in which the serum proves useless. At present, the operation, if performed in this way, is certainly a relatively safe and satisfactory procedure.

DR. J. SHELTON HORSLEY, Richmond, Va., stated that the pathology of exophthalmic goiter seems to be accepted as being due to the thyroid gland itself and not to a disease of the nervous system. This is proved by several things. First, by the fact that operations attacking the thyroid itself seem to be productive of the best results. Second, by the magnificent work of Drs. Rogers and Beebe who have elaborated this serum which acts only on the thyroid gland and employed it

in a number of cases with good results. Third, cases have been reported in which a patient presenting all the typical symptoms of exophthalmic goiter has been given an anesthetic with fatal results. Dr. Crile reports one such case. The patient with typical exophthalmic goiter was in a very desperate condition. She was put on the operating table and anesthetized with ether. Dr. Crile, seeing how badly she took the ether, and how desperate the case really was, did not operate. Not even an incision was made, but the patient died a few hours afterward with all the symptoms of hyperthyroidism, showing that this condition was brought on by the irritating effect of the ether in the blood and either the emunctories were blocked and excretion was thus lessened, or else the secretion of the thyroid was increased. This pathology being accepted, there should be some method of explaining the good results in Jonesco's operations in which the sympathetic ganglia of the neck are excised. He has done this operation once, with improvement of symptoms, but the disease recurred later. The good result is due not to the interference with the lymphatics or with the blood supply, but to the fact that the trophic and secretory impulses have been intercepted by the operation. Necessarily, the secretion from the thyroid will be less, hence the improvement. But when this diminution of secretory impulses has been compensated by increased impulses from the uninjured nerves, the condition recurs. Ligating the thyroid arteries may act, to some extent, in a similar manner, because the nervous supply is interfered with by the incision and the manipulation necessary to tie the arteries.

DR. ROBERT T. MORRIS, New York, called attention to the fact that the thyroid extract, which has been worked out by Dr. Charles Am Ende of New York, can be used in very large quantities and without producing tachycardia. He has obtained such very marked and striking results from the use of this particular thyroid extract in his clinic that, he thinks, it is worth calling attention to this work, of which Dr. Am Ende has made only a very brief report for publication. The serum was used in connection with the *x*-ray in the treatment of malignant growths. In a number of cases in which progress was being made with the *x*-ray, this particular thyroid extract, given in large quantities, apparently turned the case toward recovery. In some cases it has seemed to Dr. Morris that the condition represented a compensatory hypertrophy in which the organ was trying to produce an internal secretion for the purpose of neutralizing the product of metabolic fault. This seems to work out in practice when we give in these particular cases a thyroid extract in sufficient quantity.

DR. WILLIAM L. RODMAN, Philadelphia, has done very few operations for exophthalmic goiter, and until recently he was rather pessimistic about them. Recently he saw Dr. Charles Mayo perform five operations for exophthalmic goiter and the result in each of these five cases was so perfectly satisfactory that he felt that there is a much broader and wider field for surgery in exophthalmic goiter than he had hitherto believed. Dr. Mayo has demonstrated that the dangers of general anesthesia have been greatly exaggerated. His results have been much better than the results of operating under cocain anesthesia. The point in his technic that impressed Dr. Rodman most was the fact that he makes his incision higher than any one else. It is preferable to the low incision of Kocher. Next, instead of dividing the sterno-thyroids and sterno-hyoids in the middle, he divides them near their insertion, which, undoubtedly, greatly facilitates the removal of the gland. It also prevents cosmetic defects after operation.

Another point in Dr. Mayo's technic which impressed Dr. Rodman much was the exceeding care with which he handles the gland. There is no undue squeezing or manipulating the gland. It is always handled with the utmost gentleness. These cases all did very well. The first patient was operated on on Friday with a pulse of 150. The next morning the pulse was 88 and the patient left the hospital on the following Monday, just seventy-two hours after the operation. Each of the other patients did equally well. While Dr. Mayo's mortality was greater in his earlier operations, he has lately done 42 consecutive cases with but a single death. The profession has been pessimistic in the past; in truth, too much so. There is a better outlook for operations rightly done in exophthalmic goiter than has been hitherto believed.

DR. ROGERS has had some experience with the surgery of the thyroid and he has been greatly impressed with the mortality and subsequent ill results. Only the exceptional surgeon has the experience which obviates mortality and prevents failures in exophthalmic goiter. Dr. Rogers has under his care now six cases that were operated on with failure to cure or subsequent relapse. As for the danger of surgery, some men overlook the pathology of the condition which involves a possibility of status lymphaticus and sudden death. Also many men extirpate an asymmetrical lobe that is very much enlarged, but really has nothing to do with the thyroidism. It is generally the smaller parts that need looking after in these cases. The larger part is only cystic and is without function.

As for the disappointments of the serum treatment, Dr. Rogers said that there are many curious things that are utterly beyond understanding. Only a certain kind of animal will make a serum, and only a few animals will make a good serum. The dog makes a perfectly useless serum; sheep pretty good, and once in a while very good. White rabbits make a very poor serum; only gray rabbits make the best serum. Originally he believed that only the pathologic gland would make a good serum, but he has now learned that a fairly good serum can be made from the normal gland. He advised giving the serum a trial before resorting to surgery.

DR. SHEPHERD has never had a death from general anesthesia in operations on the thyroid, and he has had a great many operations. With general anesthesia the pulse often becomes much slower and the breathing much quieter. As to handling the gland, he believes that it is handled more gently under general than under local anesthesia where the patient is often struggling. With the exception of two deaths, all his patients were benefited by operation. In one instance the improvement lasted only four years, when there was a recurrence of the symptoms. As a rule, it is only the more desperate cases that die, and then not from the anesthesia.

As to the pathology of the disease, many cases of enlarged thyroids with hyperplasia of the gland are without any symptoms of exophthalmic goiter at all. He has had no experience with the serum, so that he could not give an opinion as to its efficacy.

A STUDY OF CONVERGENCE AND ITS DEFECTS.

INCLUDING AN ANALYSIS OF FOUR HUNDRED AND FORTY-ONE CASES OF EXOPHORIA.*

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Next to the visual act itself, convergence is admittedly one of the most interesting of the functions of human eyes. That it is evolutionally the last oculomuscular function to appear seems now equally well admitted. The gradual evolution of the invertebrate eye is scientifically satisfactory. The transition from the invertebrate to the vertebrate eye is involved in some doubt. From that point upward, however, the evolution is resumed and continues very regularly. In the lowest class of vertebrates (the fishes) the eye is probably no better than a squid's. Their eyes are situated on the side of the head with such widely divergent axes that there is no overlapping of the visual fields at all. There is no consensual movement (each eye being absolutely independent of the other). There is no common field of view, no common point of sight, no corresponding points in the two retinas; hence no stereoscopic vision. Leaving out amphibians and reptiles (of which we know little), in birds binocular vision becomes possible by a unique arrangement of corresponding

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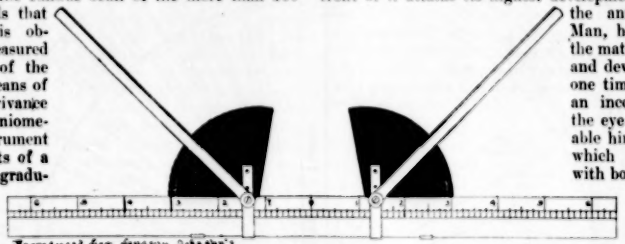
points about a very excentral fovea, though their optic axes are widely divergent. In mammals the optic axes are brought around more and more to the front, the convergence of the axes on a point of sight becomes easier and easier. With this comes the gradual development of corresponding points about a more highly organized central area; hence all the phenomena of stereoscopic vision and the judgments based thereon.

Only in the anthropoid apes do we find the eyes fairly in front with optic axes parallel in the position of rest. There is, too, a much more highly organized spot of central vision (fovea) added, which is the essential basis of what the psychologist calls attention.

Out of all this there came thoughtful attention to the object under observation—to the partial exclusion of other things—which seems a necessary condition to the emergence of the higher faculties of the mind. The existence of the fovea is necessary to the concentration of attention on the thing looked at, for, as Le Conte says: "How could we attend to one thing if all other things were equally distinctly seen?"

Harris[1] finds that in all vertebrates below mammals there is a total decussation of the optic nerves at the chiasm. In this connection the magnificent work of Lindsay Johnson[2] is of profound interest. Each time he investigated the fundus oculi of the more than 200 different animals that came under his observation he measured the divergence of the optic axes by means of a special contrivance known as a goniometer. This instrument (Fig. 1) consists of a bar on which graduated quadrants slide, each carrying a movable indicator revolving on it. To measure the divergence of an animal's eyes the instrument was placed on its head immediately above and parallel to the plane passing through the centers of the two eyes. The quadrants were moved so that the pivots of the indicators (a) lay in the axes of the two eyes. The indicators were then rotated on their pivots until the indicators themselves lay directly in the line of the two optic axes. The number of degrees thus obtained indicated the deviation from the median line or, in other words, from parallel vision. If the indicators stood at right angles to the median line the divergence would equal 90 degrees; if parallel to the median line, the divergence would equal zero. The results of this colossal task are shown in Figure 2 taken from his work.



GONIOMETER
Figure 1.

On the left hand of the chart will be found the range of divergence between the various members of the orders taken as a whole, while on the right details as to families and genera are given. It will be readily seen from the chart that the higher the order the nearer the axes approach parallel vision, although the range in each is considerable, and each one to some extent overlaps the other. It will also be noted, on the right hand of the chart, that the degree of divergence in each eye for the hare is 85 degrees, for the giraffe 72 degrees, the porcupine 45 degrees, the hedgehog 40 degrees, the pig 33 degrees, the wolf 25 degrees, the dog 20 degrees, the fox 15 degrees, the cat 10 degrees, the lemur about 5 degrees and for the monkeys and apes, as also for man, zero or parallelism of the optic axes.

In the development of the human embryo there can be followed the same evolution in one species that is above outlined in all the vertebrate. The eyes develop on the sides of the head as in the fish. Gradually with the formation of the face they are brought around to their permanent frontal position and are in place about the end of the second month. In this the ontogeny agrees with the phylogeny, and the forward rotation of the orbits of each vertebrate is consistently followed in the developing human embryo (Pohlmann). During the rotation of the eyeball to the front the orbits also become less divergent until in man the inner walls of the two orbits are parallel and in relation with the nasal fossæ. The outer wall describes an angle of about 40 degrees to the inner, giving an orbital axis in the human being of about 20 degrees divergence from the median plane of the head.

The stimulus to the animal to see what is directly in front of it attains its highest development in man and the anthropoid apes. Man, however, carries the matter still farther and develops what "at one time amounted to an inco-ordination of the eye muscles to enable him to see things which are close by with both eyes" (Pohlmann). The monkey can maintain only a limited convergence for a short time and man is the only animal with sustained convergence. As civilization progressed, near work became more and more absolutely necessary and convergence became less an effort and more of an automatic act. With the invention of the printing press, the amount of near work imposed on the eye increased manifoldly and to-day we use our eyes largely as "contact organs."

ANALYSIS OF THE ACT OF CONVERGENCE.

Inasmuch as convergence and divergence are parts of the same act, it may be well to ask, with Maddox, "What is the starting point of convergence?" If the innervation of the eyes were temporarily inhibited, the eyes would surely take up a position of about 20 degrees' divergence, as claimed by Hansen Grut.[3] Le Conte[4] has shown that during sleep, and in his own case during drowsiness, the eyes diverge, as they also do in drunkenness, under anesthesia and at death. Prentice,[5] believing that the postmortem findings might shed light on the real anatomic position of the eyes, tabulated the conditions in 3,000 cases within from 24 to 48 hours after death, and in not one did he find the eyes straight.

1. Brain, vol. xxvii.
2. "The Comparative Anatomy of the Mammalian Eye," London, 1901.
3. Knapp's Archives, vol. xxiv.
4. "Sight," p. 254.
5. Lancet, 1899.

In 17 persons who had parallel ocular axes during life, he found divergence postmortem. He concludes, therefore, that even in civilized man there is a tendency toward divergence which is overcome by fixed innervation. This fixed innervation is what Maddox[6] calls tonic or initial convergence.[7]

In Figure 3 he represents convergence as composed of three elements: the initial or tonic element, the accommodative element, and the reflex element, although exception might be taken to the latter element. It is simpler to resolve convergence into two elements, namely, initial or tonic convergence (the phylogenetic convergence of Pohlmann) and accommodative convergence (Fig. 4). This, however, is the academic phase of the matter. Landolt approaches the subject of convergence in a much more practical fashion and shows how deeply he feels that it is a problem sufficiently often encountered in the flesh to merit our earnest study. He prefers to measure the amplitude of convergence,[8] because of his conviction that that is the key to many otherwise puzzling anomalies of convergence. He, therefore, estimates the punctum remotum of convergence by finding the greatest prism base in that can be overcome (prism divergence). For rough calculation, this may be divided by 7 and the approximate degree of negative convergence (or divergence) in meter angles thus obtained. For instance, if prism divergence be 7, there is one meter angle of negative convergence. For estimating the postive convergence, prisms are not of sufficient value, because of the varying quality of convergence so estimated. His preference is for the ophthalmodynamometer (of his own contrivance). For this purpose I have for three years employed what seems to me a much simpler device. Using the one-candle electric light of the DeZeng electric ophthalmoscope, I half-darken the room and then, starting at 15 inches from the face, have the patient watch the light attentively as it is carried in the median line toward the eyes. At about 10 inches from the eyes the corneal images from the electric light become plainly visible to the surgeon, and it is then easy to watch these images as the light is carried toward the root of the patient's nose until one or the other of the corneal images comes to a standstill. This is the near point of convergence, and one can readily calculate the number of meter angles of positive convergence at the patient's disposal. For instance, if one of the corneal images comes to a standstill at 4 inches, there are 10 meter angles of positive convergence; if at 5 inches, there are 8 meter angles; if at 3 inches, there are 13 meter angles. The test as thus applied is objective, while Landolt's procedure is subjective and open to all the disadvantages of every subjective test. This test is applied in about 5 seconds, as a rule.[9] The amplitude of convergence is, hence, the sum of the positive and negative convergence. Thus if there be 9 degrees of prism divergence (1.28 meter angles of negative convergence), and the corneal images come to a standstill at 4 inches (10 meter angles of positive convergence), the total amplitude = 1.28 + 10.00 = 11.28 meter angles of convergence.

By the above test I have found that the average patient converges to 4 inches (10 centimeters) without any difficulty (= 10.00 meter angles), and, as the average patient has somewhere near 7 degrees of prism divergence[10] (1 meter angle of negative convergence), the average amplitude as I have found it in my office is about 11 meter angles. Landolt has found 10.50 as his average. He has further shown[11] that of the total 10.50 to 11.00 meter angles the reserve ought to be about twice as great as the convergence required by the work, and that is about what occurs in the average individual. Most work is done at about 13 inches from the eyes, that is, it requires about 3 meter angles of convergence, and this leaves from 6 to 7 meter angles of reserve, or a trifle more than twice as much as the ordinary amount used. If there be much departure from this relation, there is almost sure to be some discomfort in the use of the eyes at the occupation distance. As these two tests—estimation of the prism divergence and estimation of the convergence near point—can be accurately executed in from 3 to 4 minutes, there can be little excuse for omitting them in any patient with exophoria who

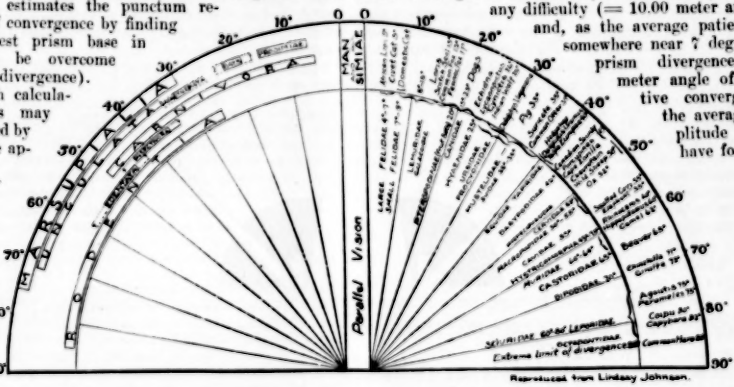


Diagram showing the divergence of the optical axes in the Mammalia

The Natural Orders are represented on the left-hand quadrant, the Families, Genera and Species on the right.

Figure 2.

6. "The Clinical Use of Prism," Bristol, 1897.

7. Hansen Grut aptly compares it to the tonic element in the accommodation of a hypermetrope.

8. Norris and Oliver: "System of Diseases of the Eye," vol iv.

9. It is also worth while in pursuing this test to approach the light from the right and left side as suggested by Duane.

10. In 60 consecutive cases of exophoria it was found to be 7.5 degrees.

11. Arch. Opht., March, 1886.

has not been made comfortable by the use of a non-prismatic correction only. Indeed, I believe it wise and valuable to make them in all cases of exophoria before dismissing the patients to try the effect of their proper correction.

ANALYSIS OF FOUR HUNDRED AND FORTY-ONE CASES OF EXOPHORIA.

In the analysis of the following 441 cases, these facts are to be borne in mind:

1. All of the cases occurred in private practice.

2. Only cases presenting stereoscopic vision have been included in the analysis (hence exotropia is excluded).

3. Proper correcting lenses were prescribed by me and tried thoroughly before proceeding to the treatment of the exophoria as an intrinsic condition, or the patients had been recently refracted by a trustworthy ophthalmologist.

4. No selection of cases for these statistics has been made. They have been taken consecutively and include all the cases of exophoria I have seen in private practice.

5. Refraction with a mydriatic was done in practically every patient under 45 years of age when I did the refraction myself. Over that age the refraction was done without a mydriatic.

Fig. 3.—(After Maddox). R, Punctum remotum. R. I., initial convergence. I A, accommodative convergence. A O, reflex convergence.

6. In testing for exophoria at the near point, the dot and line test was discarded entirely, first, because it places the eyes under highly artificial conditions; second, because many women (and the bulk of these patients were women) can not tell whether objects are in alignment or not.

Instead of the dot and line, the Maddox multiple rod was used, along with the one-candle electric lamp used on the DeZeng electric ophthalmoscope (described above in connection with the convergence near-point test). This little light the patient holds at the ordinary occupation distance (about 13 inches), and by means of the multiple Maddox rod great delicacy is secured, one-fourth of a degree of error being easily thus revealed. In presbyopes the reading correction should be used when this test is applied or the observer will be led into error. Schild's, Baer's or any other development of the simple apparatus I have described may be used, but for six years I have found the simple one-candle electric light and the Maddox rod satisfactory in every way.

7. In testing prism divergence (abduction) and prism convergence (adduction) separate prisms were used, the prism divergence being always estimated first. In obscure cases the following 7 points were considered essential to a proper study of the case: (a) The exophoria for infinity (or distance); determined by both the cover test and the multiple Maddox rod.[12] (b) The hyperphoria for infinity. (c) The prism divergence (abduction). (d) The prism convergence (adduction). (e) The exophoria for 13 inches (33 centimeters). (f) The hyperphoria for 13 inches (33 centimeters). (g) The convergence near point.

These seven maneuvers may be accurately gone through in from 6 to 8 minutes and are well worth systematic employment in every obscure case of exophoria in which symptoms persist in spite of the best refraction.

Age.—The frequency of exophoria in the various decades of life is given in Table 1, which shows plainly the influence of age in its production. The occurrence of less than one-tenth of all the cases before the twentieth year is a significant fact. Weiss[13] calls attention to the outward swing of the orbits (and along with them their long axes) after puberty. Duane[14] notes those cases in which divergence has developed as a result of the gradual divergence of the orbits taking place during the period of growth in children and youth. "This divergence, by altering the angle of insertion of the tendons and the amount of tendon in contact with the eyeball (contact arc), increases very greatly the power of the externus and diminishes that of the internus, and in itself is quite sufficient to account for the development of divergent strabismus." If it will give rise to so pronounced a deviation as divergent strabismus, it may well be asked: How much more easily may it give rise to a latent deviation or exophoria?

TABLE 1.

Decade.	No. of times found.
Under 10	6
11 to 20	34
21 to 30	90
31 to 40	106
41 to 50	124
51 to 60	59
61 to 70	14
Over 70	6

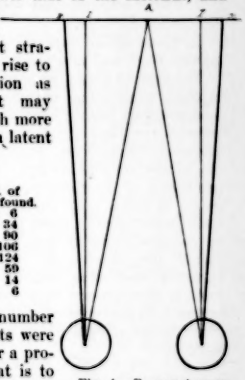


Fig. 4.—R., punctum remotum. R. I., initial convergence (tonic convergence. I. A., accommodative convergence.

Sex.—Of the whole number here reported 161 patients were males and 280 females, or a proportion of 6 to 11. That is to say, there were almost twice as many women as men presenting exophoria. These figures accord very well with those furnished by analyses of large numbers of refraction cases (say 1,000 to 2,000)[15] which show that about twice as many women as men apply for refraction in private practice. Women's nervous systems are admittedly less

12. The cover test seems to me one of the most valuable tests at the ophthalmologist's service if applied as follows: The patient is made to survey some small object on a homogeneous background (like a blank wall or a small point of light looked at in a mirror across the room; by reflecting the light in this way a good distance can be obtained for the test). With the patient's gaze fixed on the fixation object, a card is carried in front of the eyes from right to left, covering first one eye and then the other. This maneuver should be repeated from 10 to 15 times to break in on the fusion impulse as much as possible, great care being taken that at no time, as the card is being moved, both eyes get a simultaneous view of the object else the point of the test is lost. By attentive observation, the eyes will be seen to give a slight jump in or outward as they are alternately uncovered, unless there be lateral balance or less than 1 degree of error. This test is wholly an objective one, and its objectivity and accuracy give it great value. If it is desired to make the test subjective (by asking the patient after a few movements with the card whether the fixation object appears to jump from side to side as the card is shifted), it is very readily done. So carried out, it becomes the parallax test, and is of the greatest delicacy, one-fourth of a degree of deviation being easily possible of detection in intelligent patients.

13. Knapp's Arch., vol. xxv.

14. "Motor Anomalies of the Eye."

15. See Risley and Thorington, Jackson, Gould, Ellis and others.

resistant than men's, and it is also probable that women employ their eyes more at the occupation distance than do men. Neurasthenia, too, for many reasons, is much more likely to occur in women than in men. Yet examination of 33 cases of exophoria of the neurasthenic type occuring in this whole series were practically equally divided between the two sexes, 15 of the patients being men and 18 women. It is altogether probable that if the figures could be so extended as to include an equal number of males and females exophoria would be found to occur as often in 1,000 men as in 1,000 women.

TABLE 2.

Students	50	Farmers	3
Accountants	20	Merchants	11
Desk workers	55	Needleworkers	40
Stenographers	15	Salespeople	7
Professional people	92	Storekeepers	8
Outdoor workers	7	Housewives	120
Laborers	3		
Mechanics	10	Total	441

Occupation.—Table 2 has to do with the occupation of the 441 exophorics. These workers may be arranged in three groups as follows:

1. Those who use their eyes at the occupation distance most of the day.

2. Those who use their eyes little or not at all at the occupation distance.

3. Those whose days are fairly well divided between general work and near work, e. g., housewives.

Thus the students, accountants, desk workers, stenographers, professional people, needle workers (including loomworkers) show a total of 272; the outdoor workers, laborers, mechanics, farmers, merchants, collectors, salesmen, shopkeepers, etc., show a total of 49, while the housewives number 120. In other words, practically two-thirds of the whole number of exophorics were what might be called near workers. I am inclined to attach some importance to these particular figures; for if one be engaged more or less all day in near work, even though they wear a perfect correction, the, are very likely to have some symptoms of discomfort at their work if they present exophoria for infinity; in my experience exophoria at infinity generally means deficiency either in the amount of convergence or in the faculty of using it.

TABLE 3.

Degrees of Exophoria.	Times found.	Degrees of Exophoria.	Times found.
1	95	12	4
2	145	13	1
3	69	14	1
4	29	15	7
5	14	16	1
6	15	17	..
7	9	18	3
8	9	19	..
9	2	20	1
10	12	25	1
11	1		

The degree of exophoria occurring in these 441 cases is shown in Table 3. As in hypermetropia, so in exophoria the smaller degrees of error predominate; the parallel is further borne out by the fact that, as a rule, the smaller deviations carry with them the most marked symptoms, and for the same reason, that they are overcome all day long. Of the whole series of 441 cases, 309, or 70 per cent., were of 3 degrees and under. Only 32 times, or in 41 per cent., did the deviation amount to 10 degrees or more. In 7 cases it reached 15 degrees, in 3 cases 18 degrees, in one case 20 degrees, and in one other 25 degrees. Naturally, these last few were practically instances of suppressed (or overcome) divergent strabismus (anatomic exophoria), which will be alluded to later.

TABLE 4.

In 441 cases of exophoria there was associated:		
H + ah in	176 cases.	
Ah in	34 cases.	
H in	46 cases.	
H + Ah (one eye) H or Ah (other eye	46 cases.	
Ahm in	17 cases.	
Total for H + Ah and allied conditions	319	319
There was associated:		
M + Am in	48 cases.	
Am in	16 cases.	
M in	3 cases.	
M + Am (one eye) M or Am (other eye)	7 cases.	
Amh in	16 cases.	
Total for M + Am and allied conditions	90	90
There was associated antimetropia:		
(So-called anisometropia) in	32 cases.	32
Total		441

Refractive Status.—We next come to the relation that exophoria bears to the various states of refraction as set forth in Table 4. Despite the fact that exophoria has been looked on by many authorities as a passive condition, it will be seen by reference to the table under consideration that this belief is no longer tenable. That a certain small percentage does represent a passive or under-action phenomenon (in reality an accommodative exophoria) is a well-established fact. But Table 4 shows at a glance that in 441 cases this anomaly was associated with hypermetropia or its allied refractive conditions (H + ah-ah-ahm + H) 313 times, or in 72 per cent. of the cases. And inasmuch as all hypermetropic conditions call for excessive accommodation (hence associated excessive convergence impulse), we may be sure that a certain portion of latent exophoria is masked in such cases by the attempt on the part of the patient to overcome the hypermetropia. Herein lies the unwisdom of anything like a full correction of the spherical element in the hypermetropia associated with exophoria.

Myopia and its allied condition (Am, M + Am, Amh) were present in 89 of the 433 cases (20.5 per cent.) and it is probable that a certain proportion of these were accommodative exophorias.

There remain to be considered 31 (or 7.5 per cent.) cases of antimetropia (the so-called anisometropia) in which it will be later shown that the average degree of exophoria was higher than in any other refractive condition.

Subdivisions of Exophoria.—The term exophoria, while of great clinical convenience, is not altogether sufficient to the purpose for which it is employed, in that it gives no clew to whether convergence be deficient, divergence excessive, or the two conditions coexistent. So that, for purposes of statistical study and better understanding of the cases, it becomes necessary further to subdivide a proportion of the series herein offered into:

1. Exophoria with normal divergence and deficient convergence.

2. Exophoria with divergence excess.

3. Exophoria with convergence and divergence both deficient.

These may be, for greater convenience, put down as: (a) Asthenic exophoria (Savage), true convergence insufficiency; (b) sthenic exophoria (Savage), anatomic exophoria; (c) neurasthenic exophoria.

In the series of cases here offered there were 200 in which there was only partial or no relief to the patients' symptoms afforded by correcting lenses alone. Of this latter number there were 121 in which the prism convergence and the prism divergence were estimated in the further study of the cases. Arranging these 121 according as they showed subnormal, normal or excessive divergence, we find the following:

Thirty-five times, divergence and convergence were

subnormal; 23 times, divergence was normal and convergence was subnormal; 63 times, divergence was excessive and convergence subnormal. Or to tabulate them more in detail:

TABLE 5.

Conditions.	No. of Times Found.	Average Exophoria for Infinity.	Average Prism Convergence.	Average Prism Divergence.
Neura-thenic exophoria	35	1 80°	9°	5.5°
Asthenic exophoria. . .	23	2 25°	11°	7°
Sthenic exo, horia. . . .	63	3.00°	14°	8°

This table shows that over 60 of the class so studied proved to be sthenic or intrinsic exophorias (divergence excess of Duane), a proportion that, it is thought, will hold for the whole series. It further shows that the average exophoria increases as the prism divergence increases (as would naturally be expected). Finally, it sustains Seabrook's claim that exophoria for infinity almost invariably means subnormal convergence, whether the exophoria is asthenic, sthenic or neurasthenic. The influence of hyperphoria in reducing both prism divergence and prism convergence is well known, and no case of exophoria should be put down as neurasthenic until hyperphoria of three-quarters of a degree or more has been excluded. Table 6 was drawn up for the purpose of comparing at every point 6 cases each of neurasthenic, asthenic and sthenic exophoria.

Several interesting practical points are brought out by this table. It is commonly accepted that from 10.50 to 11.00-meter angles of convergence amplitude are sufficient for comfortable work at the near point; and yet in Cases 5 and 6 of Group 1 in Table 6 there was exophoria of 8 degrees for the reading distance in both cases, with a convergence amplitude in one case of 12.00 m.a. and in the other 13.85 m.a. In Cases 1 and 4 of Group 2, there was exophoria of 12 and 10 degrees, respectively for the reading distance, with a convergence amplitude of 21.00 m.a. (!) in each case. It will be readily seen that, while all 4 of these patients possessed convergence amplitude much in excess of what is generally considered quite sufficient, they had all learned the trick of using the power that was potential in their adducting muscles all the time.

Contrast with these Patient 5 of Group 2, who presented an exophoria of 2 degrees for both distance and near work, in spite of the fact that her convergence amplitude was but 8.50 m.a. Here was a patient who, though her convergence amplitude was not all that it should be, yet held her adductors up to their work almost perfectly, for she was almost without symptoms. Too, she was one of those individuals who have themselves well in hand and accomplish all things well; moreover, her physical condition was superb.

TABLE 6.

		Exophoria for distance.	Exophoria at 15 inches.	Difference between distance and near exophoria.	Prism convergence.	Prism divergence.	Convergence near point.	Amplitude of convergence in meter angles.
Group 1:*								
Neurasthenic.	1	12	6	4	7	6	3	13.85
	2	1	5	4	8	6	3	13.85
	3	1	5	4	8	6	3	13.85
	4	1	5	4	10	6	3	13.85
	5	1	8	7	6	5	3½	12.00
	6	1	8	7	10	6	3	13.85
Group 2:†								
Asthenic.	1	2	12	10	10	7	2	21.00
	2	1	5	4	12	7	3½	12.50
	3	3	12	9	10	7	4½	10.00
	4	2	10	7	11	7	2	21.00
	5	2	2	0	12	7	5½	8.50
	6	1	6	5	14	7	4½	10.00
Group 3:**								
Sthenic.	1	12	7	5	18	10	3½	13.00
	2	12	19	7	20	14	5	10.00
	3	2	2	0	19	8	3	14.15
	4	8	15	7	8	9	4	11.30
	5	5	18	13	18	12	4	11.70
	6	4	16	12	11	9	4	11.30

* Cases with subnormal prism divergence.
† Cases with normal prism divergence (= 7 degrees).
** Cases with excessive prism divergence.

The following 5 cases illustrate well the value of estimating both the exophoria for the near point and the amplitude of convergence—for if the exophoria for the near point be much greater than that for infinity and the convergence amplitude be normal—the necessity for convergence training, with prisms or otherwise, is apparent. Such patients need to be shown how to use a faculty they already possess. On the other hand, when exophoria for the distance shows no increase when estimated for the near point, though the convergence amplitude be normal or even above normal, not so much need be expected from further training of a faculty the patient already knows how to use and is probably drawing on heavily.

A word as to the proportional relation between prism divergence and prism convergence. In 1895, Risley[16] stated his belief that muscular asthenopia frequently proceeded from disturbance between the relation of adduction to abduction which should be as 3 to 1. This was based on results obtained with the rotary prism. Some time earlier Noyes had spoken of 5 or 6 to 1 as the normal relation. Following Risley, Bannister[17] went over 100 U. S. Army recruits and, using separate prisms from the trial case, came to the conclusion that "there exists in healthy eyes no positive definite relation between prism convergence and prism divergence for distance, and that it is not correct to claim that such eyes should, without practice with prisms, show at 6 meters a ratio between these functions of 3 to 1 or 6 to 1 in favor of convergence, not permitting abduction to fall below 6."

Naturally, much depends on the way in which the tests are applied. Convergence is a variable elastic quantity. Prism divergence is a fairly constant one. It would seem wise, therefore, first to test the prism divergence, gently leading the patient along by having him close his eyes from time to time and open them suddenly, with the purpose of arriving at his greatest possible prism divergence, then closing and resting the eyes for a few minutes before estimating the prism convergence. This was the method employed in the subjoined series of 121 exophorics in whom it was found that: prism divergence was in excess 12 times; prism divergence and prism convergence were equal 10 times; the relation of prism convergence to prism divergence was as 1½ to 1, 30 times; as 2 to 1, 41 times; as 2½ to 1, 19 times; as 3 to 1, 7 times; as 4 to 1, twice.

Bannister's figures appear to be very good ones to work from, as they are based on methods largely in use in ophthalmic offices the country over. As compared with them, it will be seen that in exophoria the relation of prism divergence and prism convergence varies in so confusing a manner as to attach little value to their relative behavior. Estimation of the near point exophoria and convergence near point are more essential. Necessarily the amount of prism convergence in a case of exophoria is always of interest; for instance, if a pa-

16. Univ. Med. Mag., 1895.
17. Annals of Ophth., 1898.

tient's distance vision begins to blur when a 6, 8 or 10 degree prism is placed base out before the eyes, the inference that their prism convergence is defective and that they have not learned to dissociate their accommodation and convergence is entirely justifiable.

In Table 7 the average exophoria in the various states of refraction is shown and we here find food for thought:

TABLE 7.

		Average exophoria.
H + Ah and allied conditions.....	319 cases.	2.5 degrees.
M + Am and allied conditions....	90 cases.	3 degrees.
Abm	17 cases.	3 degrees.
Abh	17 cases.	4 degrees.
Antimetropia	31 cases.	5 degrees.

In H + Ah as it commonly occurs, stereoscopic vision is usually very little, if any, hindered, and the average exophoria associated with it is but 2.5 degrees. In antimetropia (the so-called anisometropia) where dioptric inequality between the two eyes ofttimes interposes a weighty hindrance to smooth, easy stereoscopic vision, the average exophoria rises to 5 degrees. In other words, when there is sufficient obstacle to the performance of stereoscopic vision, the eyes tend toward the position of anatomic rest, which is a heritage to us from our forebears for countless generations. Exophoria thus reveals itself as a reversion to a lower type and may justifiably be considered an atavistic phenomenon, as claimed by Lindsay Johnson, Pohlmann, LeConte, Jackson and others. The data here given lend firm statistical support to that contention.

As to symptoms, 200 of the 441 cases here catalogued presented symptoms of muscular asthenopia persisting after careful correction of their refraction. Of these two hundred, 173 exhibited headache, the frontal type predominating in 102, the occipital in 60, the temporal in 11; while 140 gave testimony as to more or less vertigo, especially after near work. Ocular fatigue and ache were present in 153, ocular tenderness in 98, conjunctival irritation was complained of in 121, low-grade photophobia in 130. Nausea seemed fairly well related to the exophoria 72 times; and drowsiness after near work was almost invariable, as was also picture-gallery and after-shopping fatigue. Gastric reflexes seemed etiologically related to the exophoria in 23 cases in an unmistakable way. By gastric reflex is meant the nameless vacant sensation in the epigastric region so perfectly described by DeQuincey in his "Confessions." That a certain proportion of exophorics (who overcome their exophoria) have this reflex is indisputable. Two cases presented intractable superior dental neuralgia (with teeth in the most perfect condition) that yielded to prisms, bases in, for permanent use. Another case exhibited the complete picture of acute glaucoma that subsided within three days after the incorporation of prisms, bases in, in distance correction.

Treatment.—The treatment of exophoria calls for about as nice discrimination as any problem in medical practice.

First of value, I would place right living, hydrotherapy and abundant sleep; second, the most painstaking refraction; third, convergence training. This may be of various kinds, but I have resorted mainly to two kinds, namely, converging exercises on a pencil from arm's length in toward the root of the nose until the convergence near point is reached and the patient sees double. This was invariably prescribed to every exophoria. Pencil converging exercises to the left and right (as suggested by Duane) was of service in a few cases.

The second element in convergence training is by means of prisms, bases out, according to the method popularized by Gould as "weighting the convergence stimulus." The patient is given a pair of 5-degree prisms in a frame with which he walks toward a candle flame, placed at the far side of the room. The prisms are raised as he goes toward the light. As soon as he reaches it, the prisms are dropped before the eyes and he backs away from the light, gazing steadily at it all the time. Should the light be seen double, the patient immediately retraces his steps and again backs away from the light until he goes the entire length of the room, holding the candle light single. This is done from ten to fifteen times, two or three times daily. After a week, 10-degree prisms are ordered to be used in the same way; in another week or two, 15 degrees or 20 degrees according as the patient rapidly or slowly learns the trick of dissociating his accommodation and convergence. This method is of value in all exophorics.

Prism exercises were resorted to in this manner in 147 of the 200 cases as the sole optical treatment aside from the wearing of a proper correction; in 26 more the exercises were employed in connection with the use of prisms, bases in, in the patient's distance correction; and in 27 more in connection with the use of prisms, bases in, in the patient's reading glasses.

4. In Prisms, Bases In, for Permanent Use.—The use of prisms, bases in, to be incorporated in the patient's distance correction, has been deprecated by various high authorities. Their chief (and almost unanimous) contention has been that the exophoria for infinity increases under the use of such prisms. That this is true, within certain limits, must be admitted; and yet in anatomic exophoria,[18] when proper correction of the ametropia has failed to relieve, and attempts at training the convergence have been poorly borne, the trial of prisms, bases in, in an extra or hook-front experimentally seems to me entirely justifiable. In cases so selected, it will be found that when convergence has been made somewhat easier to the patient by the use of rest prisms, the convergence may then be trained to a very considerable point, and the convergence for infinity thus kept from increasing. This was my experience in 17 out of 42 cases in which prisms, bases in,[19] were ordered for constant use. It is no more surprising that the exophoria should increase in these cases of anatomic exophoria than that a patient should gradually manifest more and more of a latent hypermetropia as plus lenses are skillfully crowded on his eyes. And I believe there are few cases of anatomic exophoria (due to orbital peculiarities, insertional anomalies, etc.) in which there is not a considerable element of latent exophoria unrecognizable with the Maddox rod because of the overwhelming fusion impulse in such individuals. For such patients I know of no test comparable to the cover test if employed as previously described. It is as wrong to order prisms, bases in, for permanent use without soon after training the convergence to the highest possible point as it would be to rest an inflamed joint and then not exercise it afterward. Many of these patients have a splendidly developed convergence, but it is because of their excessive use of it all day long in overcoming their exophoria that they have their symptoms.

A class of patients for whom convergence training is even more plainly indicated are the exophorics who pre-

18. By this is meant exophoria with highly excessive prism divergence and defective temporal arc rotation. (The "Divergence Excess" of Duane; or the "Intrinsic Exophoria" of Savage).

19. Minus prisms Maddox prefers to call them.

sent but 1 or 2 degrees of deviation for infinity with anywhere from 10 to 15 degrees' deviation at the reading distance (prism divergence being normal). These patients respond finely to convergence training as a rule. There is, however, a small outlying percentage in whom it will be found necessary to supplement convergence with prisms, bases in, in their reading glasses only (these patients are mainly presbyopes) before they become entirely comfortable in near work. In 45 patients for whom prisms, bases in (or decentered lenses), were used, there were ordered prisms correcting one-quarter of the infinity exophoria in five cases; one-half of the infinity exophoria in eight cases; two-thirds of the infinity exophoria in ten cases; the full amount of the infinity exophoria in ten cases; more than the full amount of the infinity exophoria in twelve cases, with uniformly good results.

There may be room for doubt as to the wisdom of ordering prisms for constant use, but one need not hesitate to order prisms, bases in, for use in reading glasses only if the divergence for the near point exceeds 10 degrees. From one-third to one-half of the deviation for the near point will usually be gratefully accepted.

OPERATION.

When it comes to the question of operation in exophoria (after all the preceding measures have failed to relieve) there is the widest variation of views among the writers on this subject.

When exercise of the function of convergence has failed Landolt[8] is devoted to advancements. In Hansell's experience[20] advancement will often permanently cure. Savage and Thomas[21] both indorse muscle shortening as the operation of election when other means have not relieved the patient. Posey[22] did DeWecker's capsular advancement in 33 cases of pronounced exophoria, and states that, although after a lapse of two years there seemed but little objective gain, the improvement in the symptoms was marked and would seem to justify the operation. W. R. Parker,[23] if "driven to operation" (and this ought to be the stand taken by every ophthalmic surgeon—he should feel driven to operation), does tenotomy or advancement according to the indications.

In the series here discussed (441 cases) operation was done seven times, and in each instance tenotomy was resorted to. In three cases, the amount of exophoria operated for equaled 10 degrees, in one case 12 degrees, in one case 13 degrees, in one case 18 degrees, and in one case 20 degrees. In two cases in which both externi were equally and moderately divided at the one sitting, there was subsequent homonymous diplopia for three to four weeks, especially in the temporal periphery, but this eventually left the patients with vastly more useful eyes than they had ever had before. All these seven patients were markedly helped by the operation. In each one convergence training (begun from three to seven days after operation) was relied on to finish a cure. Theoretically, advancement is strongly indicated in exophoria, yet in the anatomic variety, with convergence decidedly insufficient and divergence more decidedly in excess, I can see no reason why tenotomy should not be done, first, because there seems no danger of nasty after-results (from five to six years after the tenotomy, such as we see in tenotomies for convergent squint); second, tenotomy is infinitely easier than advancement for these functional conditions and vastly easier of adjustment to the particular condition in each individual, whereas advancement is very much clumsier and more difficult of performance.

In spite of the feeling in some quarters that the stitch by means of which advancement is done is very simple and very easy, I feel disposed to continue doing tenotomies in the very few exophorics (slightly less than 2 per cent.) who need operative help.

CONCLUSIONS.

Finally, the following conclusions growing out of twelve years' earnest thought and work with exophoria are offered with all diffidence as to the result of that experience:

1. Exophoria, as a symptom-producing quantity, has come to the point where it must be viewed as an atavistic phenomenon—a reversion to a lower type—a stigma of degeneration, if some one wishes to insist on it. (I do not hesitate to use the latter designation, as I am myself an exophoric.)

2. All the advantages of binocular stereoscopic vision are conditioned on convergence only.

3. Convergence as it is daily dealt with may be said to be composed mainly of two elements—the initial or tonic convergence and the accommodative convergence.

4. The amplitude of convergence ought to be always calculated.

5. The average patient has somewhere between 10 and 11 meter angles of convergence.

6. The reserve amount of convergence ought to be about twice as great as the convergence required by the work.

7. The cover test is the most reliable test for study of the position and behavior of the eyes when fixed on an object at twenty feet.

8. When converted into the parallax test much added delicacy is secured.

9. The Maddox rod and a small electric light are much superior, as a test for the muscle balance at the reading distance, to the vertical diplopia test.

10. Nine-tenths of all cases of exophoria will be encountered in individuals over 20 years of age.

11. The frequency of exophoria in the male and female is about equal.

12. Exophoria for infinity generally means deficiency either in the amount of convergence or in the faculty of using it.

13. Low degree exophorias are the most common and the most symptom producing.

14. The average degree of exophoria is least in H + Ah conditions, rises through the M + Am conditions, and is highest in antimetropia.

15. Exophoria assumes three principal forms: i. e., (a) asthenic exophoria (convergence insufficiency), (b) anatomic exophoria (sthenic exophoria), (c) neurasthenic exophoria.

16. About 50 per cent. of exophorias are of the sthenic or anatomic variety.

17. The test of the muscle balance at the reading distance is no measure of the total converging power of the patient and must be supplemented by tests for the convergence near point.

18. The prism convergence is only of relative value as a working indication.

19. The relation of 3 to 1 as between prism convergence and divergence will not nearly hold in exophoria.

20. The influence of hyperphoria in often reducing the power of both divergence and convergence is well

20. The Journal A. M. A., 1895, vol. xxv, p. 745.
21. The Journal A. M. A., 1895, vol. xxv, p. 745.
22 Annals Ophth., 1899.
23. Ophth. Rec., 1901.

known, and no case of functional divergence should be put down as a pure exophoria until hyperphoria of three-quarters of a degree or more has been excluded.

21. In hyperexophoria the use of suitable vertical prisms, with convergence training, will frequently do away with all the patient's symptoms.

22. The symptoms of exophoria do not differ materially from those of other forms of eyestrain.

23. The treatment of exophoria should comprise (in the following order): (a) Right living; (b) careful refraction; (c) convergence training; (d) prisms (bases in) for infinity; (e) prisms (bases in) for the reading glasses only; (f) tenotomy or advancement.

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DISCUSSION.

DR. EDWARD JACKSON, Denver, in the main, and particularly in his conclusions as to treatment, agreed with Dr. Reber. These conclusions, and particularly the order of importance of the different therapeutic measures, he said, ought to be impressed and taught widely, viz., right living, careful refraction, convergence training, prisms, tenotomy or advancement. These are by no means of equal importance. Both in the number of cases to which it is applicable and in its importance in the cases to which it does apply the first stands far ahead. We can not by operation and training make up for the faulty nutrition of the nervous system. As to the amount of reserve convergence, most ophthalmologists who have carefully studied the accommodation have realized that the amount of accommodation that must be kept in reserve, for the comfort and health of the patient, varies greatly in different persons. It has seemed to Dr. Jackson that the proportion of convergence that could be used habitually varied even more widely, and in general that but a small part of the convergence should be used.

He agreed with Dr. Reber that exophoria becomes more common with increasing age, more particularly as regards near work. Inability to sustain convergence for near work he finds very common at the age of presbyopia. A great many patients are relieved quite as much by prisms, bases in, as they are by change of lens. For a good many years he has tested all refraction cases as to muscle balance with the Maddox rod test and low degrees of exophoria are extremely common. He would not say that the low degrees are so likely to produce trouble as the high degrees. If we take the total number who develop asthenopia, probably more than one-half of them have quite low degrees. But the number of people who present that amount of exophoria is so much greater than those who present the higher degrees that the low degrees are evidently less likely to cause trouble.

DR. ALEXANDER DUANE, New York, referred to the following points in Dr. Reber's paper: First, as to the convergence near point, he thinks the distance usually given for this (four inches from the center of rotation of the eye) is too great. In his experience for extreme convergence in normal cases the point is not more than three inches from the center of rotation of the eye, or practically two inches from the root of the nose. He determined it very simply by using a very small white headed pin, which is carried in rapidly toward the eyes. The movement, when the convergence near point is reached, is determined (a) subjectively by the fact that the patient sees the pin double; (b) objectively by the fact that the physician can see one of the patient's eyes oscillate and diverge. It is important in this regard to note which eye diverges. In exotropia there is often a relative convergence near point, i. e., the point down to which the patient still makes the attempt to converge, although he may never actually succeed in converging on the object of fixation. It is an important matter to determine this relative near point, for a patient with a comparatively close relative near point affords a much better prognosis both for operation and for orthoptic treatment, than one who makes no attempt at convergence at all.

Second, in testing the exophoria for near he agrees with Dr. Reber that the dot and line (phorometer) test is not very satisfactory, but instead of using the Maddox rod for determining this he uses the cover test (measuring the deviation with prisms), and is sure that he gets trustworthy and precise results.

Third, he can not agree that exophoria for infinity almost invariably means subnormal convergence. In very many cases the presence of 10, 20 or even 30 degrees of exophoria for distance is compatible with perfect converging power and normal ability to overcome prisms, base out.

Fourth, he does not feel that exophoria in anisometropia and other conditions interfering with binocular vision represents necessarily, or even frequently, a reversion to the lower type, a sort of atavistic phenomenon. His explanation is that, owing to the anisometropia, etc., the two retinal images are of different size and distinctness, and it is correspondingly difficult to fuse them. If the patient gives up the fusion effort and sees double it is for his interest to throw the images as far apart as possible, so that they shall often confuse each other less, and this he does. The often spasmodically varying character of the exophoria for distance accords with this view.

Fifth, as regards the use of prisms for constant wear, Dr Duane is opposed to them, because, while serviceable for a time, they seem in the long run to be detrimental. The untoward efforts may not occur until after they have been worn for a year or so. Not infrequently he has had patients come to him who have worn prisms for a long time and who say that, while at first comfortable, they have later become uncomfortable, and such patients he finds are almost always helped by removing the prisms. Again, prisms, base in, he is sure tend to increase the exophoria for near as well as for distance; i. e., tend to cause a true convergence insufficiency.

Sixth, Dr. Duane says that operating is a last resort, but when the indications are clear for it it does give gratifying results. His rule is: (a) With large exophoria for distance and less, or at least very little more exophoria for near, with good converging power (close convergence near point) and with eyes that can be and have been suitably trained to converge and see binocularly, he does tenotomy of one or preferably both externi. (b) With little exophoria for distance and low diverging power combined with exophoria for near and little or no converging power (remote convergence near point), he does advancement of one or both interni, with tenotomy of the externi. (c) With marked exophoria for distance and near with low or no converging power, and high converging power he does advancement of the interni.

It is understood that the operations are preceded by thorough orthoptic treatment.

DR. MARK D. STEVENSON, Akron, Ohio, said that convergence is chiefly stimulated by the desire for a single binocular stereoscopic vision. It is this desire which creates the so-called initial or tonic convergence which is required, so that a distant object may be seen singly, and it also compels convergence in association with accommodation in seeing close objects. The eyes can usually converge for a much nearer object than they can accommodate for, and this last part of the convergence act is done solely in the interest of single vision. Accommodation and convergence are usually associated only in the central act of convergence and not in its beginning or ending. Those under the effect of a cycloplegic, the old, and some myopes having no accommodation, often have good convergence. In testing for the muscle balance at the distance, the desire for single vision should be eliminated so far as possible, e. g., by making the objects seen with each eye dissimilar, as with the Maddox rod or by displacing the images by means of prisms, so that they could not be fused. However, in testing convergence which depends primarily on the desire for single vision this desire should not be suppressed, but the amplitude of convergence, which is of chief importance, should be determined. This is easily done by first determining the negative convergence, if any, in meter angles and then the positive convergence. The convergence near point may be found by means of a small light, but it is closer to the patient if a small white object on a black background is used, and Dr. Stevenson usually finds the convergence near point considerably closer to the patient than does Dr. Reber. In the *Ophthalmic Record*, July, 1904, Dr. Stevenson described a simple instrument by which the muscle balance at the ordinary reading distance during accommodation for that distance can be determined in a few moments, the patient looking closely at the small figures. By this means the degree of convergence for the reading distance, stimulated only by the

accommodation for that distance, may be better determined than by the Maddox rod, as it is not so easy to accommodate for a light. The patient might accommodate for the red streak of light which, seen through the rod, often appears to be at a different distance from the light, and thus over- or understimulate convergence.

DR. G. C. SAVAGE, Nashville, directed attention to some points of vital importance. First, no test of the lateral muscles, he said, is worth anything when made under the influence of a mydriatic. The relationship between convergence and accommodation is such that if one takes away the accommodative power the converging power is disturbed, and one can not get reliable results.

Second, judgment of verticality, horizontality and obliquity is a gift and not an acquisition. He disagreed with Dr. Reber's statement that women can not judge this as well as men; a child can judge it as well as a man and so can a woman. A third point is this, that there is a distinct meaning when there is exophoria in the near and not in the distance, with young people, and if the physician does not understand that and prescribes full-strength convex glasses under a mydriatic he gets the patients into trouble. If a patient has exophoria in the near and not in the far, that patient has a powerful ciliary muscle, which, with a slight impulse from the brain, will focus rays of light from the page easily. Slight excitation of the accommodative center produces a correspondingly slight excitation of the converging center, and hence the feeble convergence. Now if the ophthalmologist prescribes full-strength convex glasses for a hyperope who has exophoria in the near and not in the distance, that patient will never accept those glasses. They will cause suffering until removed. If to such a patient, with, say, diopter of hypermetropia, the physician gives a one-diopter minus lens, he stimulates accommodative effort and so stimulates the convergence center, and comfort comes to the patient.

DR. F. S. DE LUE, Boston, said that in testing his cases for errors of refraction, he examines all for external muscle insufficiencies, and is surprised at the frequency with which exophoria appears when the hyperphoria has been relieved. Generally, the balance soon becomes re-established, and these patients do not complain, or if they are disturbed, it is not for distance, as a rule, but for near work, and a prism, base in, generally for near only, used a short time, gives the needed relief.

DR. OSCAR WILKINSON, Washington, said that there is a certain class of cases in which we get the most gratifying results from the use of prisms. He does not believe in using prisms for every case of exophoria, but when a patient fails to get relief from the correction of the error of refraction and comes back with asthenopia symptoms immediate relief can often be given with 1 or 1.5 degree prisms, base in. In regard to exophoria increasing under the use of prisms, he does not believe we will, as a rule, observe any appreciable increase in the exophoria from the use of the prism if the examination is made with sufficient care in the first instance. It should be made several times under different circumstances, i. e., when the patient is rested and when tired. In the treatment of exophoria an operation is indicated when all other means fail. In cases with more than 10 degrees of exophoria, tenotomy is the operation of choice; in cases with less amount the tucking or advancement operation is indicated.

DR. WENDELL REBER, Philadelphia, said that when he stated that he thought low degrees of exophoria were mostly productive of symptoms it was because they are overcome. Some patients with 3 degrees have more intense symptoms than those with 12 degrees. He called attention also to the fact that prisms for permanent use are not ordered for many cases. It is one of the last resorts and he submits that prisms for constant wear may be absolutely justifiable even though the exophoria does sometimes increase. He agreed with Dr. Duane that the cover test is the most valuable for testing exophoria for distance, but does not agree that it is for the near point. He thinks the small electric light is very valuable. He said that he wished he could feel, as Dr. Stevenson does, that we do increase the power of muscles by exercise, but he does not. He thinks that we simply teach these patients to use a coördination which they already have. Frequently the exophoria decreases and the symptoms subside.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN, BASED ON THE OBSERVATION OF FOURTEEN CASES.*

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Palliative operations in cases of brain tumor are not new, and the temporary benefits to be derived in this way have been fully recognized by many physicians during many years. It has seemed time well spent to examine some of the reports of cases treated by trephining, or other method of opening the skull, for the relief of pressure when a tumor could not be localized, or if localized could not be removed. Unquestionably many cases have been omitted, and yet I have collected sufficient to demonstrate that palliative treatment has an important place in cerebral surgery.

REVIEW OF LITERATURE.

Annandale[1] said, in 1894, that more than twenty years previously he had opened the skull of a patient whose symptoms were those of general brain pressure and, although no special condition was found, temporary relief was marked. Another case of this kind, he says, was operated on by Sir Joseph Lister in the same wards with success. In 1889, Annandale removed a piece of bone from the skull because of intense headache, following an injury of the head years previously. No abnormal condition was found, although the dura was incised. The patient made an excellent recovery and was perfectly cured. Annandale remarked that when no localized symptoms of brain tumor exist an exploratory operation may be performed, and experience has shown that in some of these cases the operation has been useful in taking off general pressure and in a few instances has even been followed by shrinking or degeneration of the growth. Again, a growth may give rise to effusion of fluid or to hemorrhage, and the symptoms caused by these conditions may be at least temporarily removed by the operation.

Sahli,[2] in 1891, spoke of improvement from palliative operations. The tumor in one case was supposed to be in the cerebellum. Vision improved and headache disappeared after a palliative operation. The patient (a boy) died some months later and no necropsy was obtained. Sahli thinks that two trephinings remote from each other give more relief of pressure than one. Sometimes Nature performs a palliative operation, what he calls *Selbsttrepanation*. In consequence of the pressure the skull becomes thin at the region of the Pacchionian bodies and openings may occur, and in one case he saw the brain protruding through several such openings.

The palliative operation, he thinks, is not ideal, is not without danger, and improvement is only temporary. In one case of prolapse of the brain he observed unconsciousness immediately followed by death. Acute prolapse of the brain may impair the function of the rest of the brain. He recommends small trephinings in preference to large.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session.

1. Annandale: Edin. Med. Jour., January-June, 1894, p. 898.

2. Hermann Sahli: Volkmann's "Sammlung klin. Vorträge Innere Medicin," Nos. 1 to 20, 1890-1894, p. 300.

In 1891, White[3] described a number of cases of epilepsy in which improvement followed operation, although nothing abnormal was found.

In 1893, Horsley[4] said that the removal of excitatory symptoms by opening the skull is a marked phenomenon, convulsions ceasing. In one of his cases in which the diagnosis of tumor of the middle cerebellar peduncle was made, the skull was opened only to relieve the pressure, and the cerebellum protruded almost an inch through the trephine hole. The symptoms of tumor soon disappeared, and six months later the man felt perfectly well. He survived eighteen months, and during this time had few attacks. Only a small cavity was found.

Horsley thinks that some tumors are so interfered with in their nutrition by opening the skull and suddenly altering the pressure therein that they forthwith degenerate. In another of his cases the tumor was too large for removal, but the patient survived for over two years, with disappearance of the attacks and improvement of the hemiplegia. The tumor at the time of the operation was obviously malignant and rapidly growing, but had later undergone complete destruction by the mere exposure at the time of operation. Such a result, he says, can not be anticipated or expected as likely to follow, but it is an argument in favor of opening the skull for the purpose of palliating a condition which can not be cured.

Horsley says, also, that he has found in every case the effect of opening the skull has been to remove the headache and, further, that in cases where it was known before operation that the tumor could not be removed relief from severe pain afforded by opening the skull persisted until the patient died. The simple and safe procedure of opening the skull should be undertaken when drugs fail. At the Berlin Congress Horsley pointed out that opening the skull caused the swelling of the optic discs to subside, and that the subsidence may proceed steadily to complete recovery, provided atrophy has not previously begun. If atrophy has commenced the condition is hopeless. Vomiting is dependent on the degree to which intracranial tension is raised, and, as a rule, this symptom disappears when the skull is opened.

Jaboulay,[5] in 1893, obtained good results by trephining in a case of tubercle of the brain without opening the dura. The prognosis from trephining, he thinks, is better the more circumscribed and superficial the lesion.

Caton and Paul[6] trephined the skull in a case of acromegaly in 1893. The dura bulged in the opening. The operation relieved the headache, and the remaining three months of the patient's life were comparatively comfortable.

Macewen[7] did a palliative operation in 1889 in a case with symptoms of cerebellar tumor. The patient experienced great relief. After a week tuberculous tumors were removed from the cerebellum.

Taylor[8] reported a series of cases of brain tumor to show that there is almost invariably a subsidence of optic neuritis after operation whether the tumor is removed or not. This fact, he says, was known to Horsley so long ago as 1888. In discussing Taylor's paper Horsley said that if there is any atrophy present no amount of reduction of pressure within the skull will produce the slightest change or afford the slightest relief in respect of the loss of vision. If there be commencing atrophy, after operation the neuritis that may be present will disappear, but the atrophy is permanent; opening the skull, therefore, is not justifiable if the atrophy is well marked. Horsley was probably referring to the operation only in so far as vision is concerned, as the operation may relieve some of the other symptoms, even though it may be too late to restore vision. The optic neuritis may disappear, Horsley says, even though the dura is not opened.

In a case reported by Keen[9] in 1894, the diagnosis of intracranial tumor was made, but the growth could not be located. Trephining was recommended with a view of relieving intense headache. The tumor could not be found. The bone was not replaced, and, although the brain bulged greatly, headache and hallucinations entirely disappeared, and the man became a quiet and tractable patient. He died four and a half months after the operation, having been much relieved during this time. The operation was performed in 1892. In another case, also, much benefit was obtained by a palliative operation.

Bruns,[10] in a case of brain tumor in which the tumor could not be found at operation, improved the patient's condition by opening the skull. By the end of the third week very little choked disc remained, attacks of blindness no longer occurred, headache was much less severe and vomiting ceased. Similar improvement he had noticed in two other cases of brain tumor after trephining.

Byron Bramwell,[11] in 1894, said that he had advocated trephining for the relief of symptoms in his book, "Tumors of the Brain," published eight years previously, but that he would advocate the operation still more strongly in 1894 in cases in which there is a great increase of intracranial pressure and drugs have failed. When he published his book he had not been aware that Grainger Stewart or any one else had recommended the operation. In many cases the headache is intense, and it has been shown that in some of these cases sudden death occurs, apparently as a result of the mere severity of the pain and sudden inhibition of the action of the heart. In other cases in which the intracranial pressure is greatly increased, the patient dies suddenly in an epileptic fit or as the result of failure of respiration. Opening the dura reduces intracranial pressure and relieves headache, optic neuritis and other symptoms.

In 1894 Kammerer[12] reported a case of supposed tumor of the brain in which double trephining was done for the relief of pressure. The headache disappeared, vomiting ceased for several weeks and then occurred occasionally. The motor power of the right side (previously this side was paretic) improved and some sensation returned. The dura was not incised.

Wyeth remarked that he had trephined in two cases with symptoms of brain tumor and, finding no tumor, had sewed up the dura, but had not replaced the bone; improvement had followed the relief of pressure.

Sänger,[13] in 1894, reported a case of brain tumor in which after opening the skull and dura prolapse of the brain with improvement in the symptoms occurred.

In one of the cases of tumor reported by E. Albert[14] in 1895, in which palliative trephining was done, headache disappeared, but vomiting persisted. The dura

3. White: Annals of Surgery, August and September, 1891.
4. Horsley: Brit. Med. Jour., 1893, No. 2, p. 1365
5. Jaboulay: Arch. provinc. de Chir., vol. ii, 1893.
6. Caton and Paul: Brit. Med. Jour., Dec. 30, 1893, p. 1421.
7. Macewen: Brit. Med. Jour., Dec. 23, 1893, p. 1367
8. Trans. Ophthal. Soc. United Kingdom, vol. xiv, 1893-4, p. 105.
9. Keen: Amer. Jour. Med. Sci., January and February, 1894.
10. Bruns: Neurolog. Centbl., 1894, p. 20; also, 1893, p. 380.
11. Bramwell: Edin. Med. Jour., January to June, 1894, p. 1067.
12. Annals of Surgery, vol. xix, January to June, 1894, p. 685.
13. Sänger: Neurolog. Centbl., 1895, p. 472.
14. E. Albert: Wien. med. Woch., 1895.

probably was not opened. Later trephining was done on the other side of the head, but vomiting persisted. The relief afforded was in regard to headache and might have been greater if the dura had been opened.

In another case in which trephining was done for brain tumor the dura was punctured. Headache became at once less severe, but the improvement was only temporary. In another case after trephining apparently without opening the dura, vision improved and headache and vertigo disappeared. The symptoms returned and the dura was opened. The operation was not very successful as a palliative means.

Schlesinger,[15] in a case of brain tumor, had a large protrusion of the brain as a result of the operation. The protruded portion could not be replaced, nor was it excised, and when the patient was presented he had a subcutaneous tumor on his head as large as a fist. The general condition improved as a result of the operation, the palsy diminished, the Jacksonian convulsions ceased on the third day after the operation, the choked discs and headache disappeared. Seven weeks had elapsed since the operation at the time of presentation. A later report of this case states that the improvement lasted several months and then the symptoms returned rapidly and death soon resulted. The entire right cerebral hemisphere was replaced by a gliosarcoma.

Decompressive trephining, a term employed by Jaboulay,[16] performed for brain tumor, according to this author, has proven to be of some benefit, more often not. When done for the relief of inoperable tumors, the results are not always brilliant. He speaks of astonishing results produced by trephining in the cerebellar fossa in a case of basal tumor; the pain ceased and the vision improved. The patient lived four and a half months after the operation. Jaboulay seems to believe that the relief in palliative operations is greater for tumors of the cerebellum and adjoining parts than for tumors of the cerebrum.

Broca and Maubrac[17] ascribe to Horsley the honor of being the first to describe carefully trephining as a palliative operation in brain tumor, although scattered references to the subject are found in the literature, and they refer to Annandale and Lister. Horsley recommended making a large opening in the skull without opening the dura. Sahli, they say, recommended excision of the hernia that is produced by opening the dura, especially as the portion of the brain involved in the hernia is impaired in its function. They say that Kocher did operate in this way on a child in the service of Sahli for a tumor not localized, but probably in the cerebellum. A hernia of the cerebellum was excised and benefit resulted. Broca and Maubrac employ the term "cerebral decompression." The palliative operation, they think, exposes the patient to the danger of shock, and when the operation is performed at an advanced period of the disease death is not exceptional. When the patient survives, the most distressing symptoms are lessened or disappear entirely, and, therefore, the palliative operation should be employed. It does not cause more rapid growth of the tumor. Exploratory trephining, when the diagnosis of location has been incorrect, has taught us that cerebral decompression may give important results. These authors express themselves in favor of partial removal of a tumor when the whole can not be excised, but are undecided as regards Horsley's view that partial ablation may retard the growth of the remaining portion. They report two cases of tumor in which palliative operation was beneficial.

In 1895 J. J. Putnam[18] remarked that he knew of one patient who, in consequence of simple opening of the skull, had been free from pain for many years, though blind. He said he had seen relief from pain by large openings in the bone in several cases of brain tumors.

Shultze's[19] results from palliative operation in brain tumor were disappointing, as recorded in his paper published in 1896. He speaks of it as often dangerous, but at times beneficial.

Ludwig Bruns[20] thinks that when the tumor can not be removed or only a small part of it is removable, trephining does not affect the focal symptoms, but causes the general symptoms quickly to disappear if the opening is large. Consciousness returns, headache, vomiting and choked discs disappear. In two of his cases the patients, who had hovered between life and death, had been able to walk again after palliative operations. In one of his cases (glioma of the occipital lobe) improvement lasted several months; in a second case it lasted some weeks. As headache in many cases does not return at all, the recurrence of symptoms is not so distressing and the patient passes into coma. The tumor, by growing through the opening, removes the pressure on the lymph tracts within the skull. Bruns says the opening in the skull must not be too small, and the dura must be opened.

Clarke and Morton[21] report a case of tumor of the brain without localizing symptoms, in which a large area of the skull was removed for relief of intracranial pressure and the dura was not incised. Headache disappeared. They remarked that Beevor and Ballance thought that removal of bone alone without incision of the dura was not likely to relieve intracranial pressure, but they (Clarke and Morton) believe that the actual increase in the bulk of the cranial contents may not be considerable if the tumor is small, and the bulging of the dura mater even to a very limited extent may be sufficient to relieve the increase of the intracranial pressure caused thereby. Clinical evidence in Caton and Paul's case, as in their own, showed distinctly that removal of an area of bone alone is sometimes sufficient. Except for the recurrence of fits five months after the operation, the trephining was of great benefit in Clarke and Morton's case. Optic neuritis subsided, leaving some consecutive atrophy, but the patient had good vision, was entirely free from headache and vomiting, except once during the last series of fits, had recovered his mental powers and had a comfortable existence.

Alfred Wiener[22] reports a case of irremovable tumor. After opening the skull, headache and convulsions disappeared for about two months, but the tumor grew through the opening of the skull, attained considerable size on the outside of the skull, and the symptoms returned. Wiener speaks in favor of trepanning in cases of brain tumor, even when there is no other hope of success than the relief of the general symptoms.

Rohmer[23] has collected a large number of cases in which the palliative operation in tumor of the brain had a beneficial effect on vision.

von Bergmann[24] has called attention to the fact that

15. Schlesinger: Neurolog. Centbl., 1895, p. 702, and 1898, p. 974.
16. Jaboulay: Lyon Médical, 1896, p. 73.
17. Arch. Gén. de Médecine, February, 1896, p. 129.
18. Boston Med. and Surg. Jour., Jan. 16, 1896, p. 66.
19. Shultze: Deuts. Zeit. f. Nervenhlk., vol. ix, 1897, p. 217.
20. Ludwig Bruns: "Die Geschwülste des Nervensystems," S. Karger, Berlin, 1897, p. 229.
21. Clarke and Morton: Brit. Med. Jour., 1896, p. 802.
22. Wiener: New York Med. Jour., Oct. 15, 1898, p. 541.
23. Rohmer: Revue Méd. de l'Est., 1898, p. 525.
24. "Die Chir. Behandlung von Hirnkrankheiten," Berlin, 1899.

in contrast to those cases in which improvement was pronounced after palliative operations for brain tumor others are recorded in which no benefit was obtained, and, indeed, the symptoms were made worse. The improvement is only temporary and in some cases has been of very short duration. The operation also is dangerous. Improvement has occurred after merely opening the skull or after opening the dura also; surgeons, therefore, he said, preferred to remove a large piece of bone and leave the dura intact, but, as cerebrospinal fluid can escape only after the dura is opened, the incision of the dura is a necessary part of the palliative operation. There was a tendency, he said, to stop at a palliative operation, and this must be strongly combated. The future of the surgical treatment of brain tumors lies in the advancement of diagnosis, and in this way the almost thankless palliative operation may be changed to a radical cure. As the escape of cerebrospinal fluid is more important than the opening of the skull, v. Bergmann recommended lumbar puncture. Since v. Bergmann wrote his book experience has shown that lumbar puncture in cases of brain tumor may be dangerous. He has been pessimistic both as regards palliative and radical operations for brain tumor. He gives a long list of cases in which exploratory and palliative operations were done, but almost all of these were attempts at removal of a tumor. In his book (1899) occurs the expression, "decompressive trepanation." He refers to a case reported by Remsden in 1825, in which trephining was done for headache.

Sänger,[25] in 1894, reported two cases to show that under certain circumstances trephining is proper, even when a tumor can not be removed. In 1899 he presented a case of brain tumor in which a palliative operation had been performed. Inunctions were at first effective, but later the symptoms became very severe. An opening was made over the cerebellum and the cerebellar lobe at once protruded; when the dura was incised much cerebrospinal fluid escaped into the bandages for more than three weeks. After the operation vomiting and headache ceased and full recovery seemed possible. Choked disc disappeared, and vision improved so much that the patient was again able to read. The gait also improved and ataxia became hardly noticeable. The operation was performed Aug. 7, 1899, and the presentation of the patient was made Nov. 14, 1899.

Babinski,[26] in 1901, reported a case in which a tumor could not be found after the cerebral dura was opened, although the symptoms had been so severe as to make an operation desirable. The headache and vomiting ceased after the operation, which was performed January 14. The choked discs disappeared by January 30. The presentation of the case was made Feb. 7, 1901. In another case Babinski observed signs of an intracranial disease. The patient had an intermittent discharge of cerebrospinal fluid by the nose. Headache was lessened by the escape of fluid and became more intense when the flow ceased. Nature in this way produced decompression, he says. This case is not unlike some others reported in the literature in which Nature has effected a means of relief for intense intracranial pressure, and bears a resemblance to a case observed by me in consultation with Dr. Laplace and reported in this paper (Case 1).

A. Sänger[27] presented a case in which he had made the diagnosis of cerebellar tumor and an opening was made over the left cerebellar lobe. The improvement was marked, and Sänger believed that either the tumor had undergone a retrograde change or the condition was hydrocephalus. Of eleven cases in which a palliative operation was performed, the symptoms were much lessened in ten. The time for operation that Sänger chooses is the beginning of impaired vision. When the opening is made over the cerebellum the dura must not be opened immediately.

In 30 cases of brain tumor studied by Leslie Paton[28] that were operated on, useful vision was saved in 22 and the vision was as good as before the operation in 18. It is impossible to draw conclusions regarding his cases in which a tumor was removed and those in which a palliative operation was performed. In the discussion following Paton's paper J. S. Risien Russell said he had no doubt that trephining was of great value in saving sight. He never hesitated to recommend the operation, even in cases in which there was no chance of either localizing the tumor or removing it, for by relieving the intracranial pressure alone sight could be saved. His experience had been that removal of bone alone was not sufficient; it was usually necessary to open the dura in order to obtain sufficient relief of pressure to bring about a subsidence of the optic neuritis. Paton also expressed himself in favor of opening the dura, as he did not believe merely opening the skull was of much benefit. In two cases only the cranial cavity was opened, and blindness developed in both.

Codman[29] says:

> In 28 of the 36 operations the attempt at a radical removal of the tumor was made, and in the eight worst cases only was it decided to do only a palliative operation. I think we may almost say it is certain that if in no case the attempt at radical removal had been made and, instead, a simple operation for the relief of pressure had been done through an intermuscular incision over a "silent" portion of the cortex, the mortality would have been greatly diminished and the percentage of improvement been made much greater. I do not mean to say by this that radical operation in the hands of a surgeon who has made a specialty of brain work is not justifiable, but that in the hands of most of us, a simple palliative operation will be far better in the long run.

In my opinion, only one who has made a specialty of brain surgery should attempt to remove a brain tumor.

J. J. Putnam[30] reports cases of palliative operation. In Case 2 marked relief from terrible headache and optic neuritis followed the making of a large trephine opening in the parietal region, and this, too, although the bone was replaced. This improvement was attributed to the escape of cerebrospinal fluid, which gushed in large quantities from the wound in the parietal dura. The tumor was a glioma of the lateral lobe of the cerebellum. In Case 3 a large tumor mass protruded through the trephine opening, pushing the skin before it. A measure of relief followed the operation. Recently, in association with Watermann, he has reported other cases. Lund[31] also has reported improvement from the palliative operation in cases of tumor of the brain.

Cushing[32] has reported recently cases in which the palliative operation has been of much benefit.

DR. W. W. KEEN'S CASES.

I add condensed notes of two unreported cases in which palliative operation was performed by Dr. W. W. Keen, with improvement in each.

25. Sänger: Neurolog. Centbl., Dec. 1, 1899, p. 1118.
26. Babinski: Revue Neurolog., 1901, p. 266.
27. Sänger: Verhandl. d. Deuts. Gesell. f. Chir., 1902, p. 158.
28. Trans. Ophthal. Soc., United Kingdom, vol. xxv, 1904-5, p. 129.
29. Codman: Boston Med. and Surg. Jour., July 20, 1905, p. 74.
30. Putnam: Boston Med. and Surg. Jour., July 20, 1905, p. 76; also Jour. of Nerv. and Ment. Dis., May, 1906.
31. Lund: Boston Med. and Surg. Jour., July 20, 1905, p. 81.
32. "Surgery, Gynecology and Obstetrics," vol. i, 1905, p. 297.

CASE 1.—Jan. 3, 1901, E. H. M., aged 26, complained of failing vision and had later several attacks of temporary blindness. Among the first symptoms were severe headache on the right side and vomiting, later the pain shifted to the left side. He was found to have extensive optic neuritis. He has a little vision now in the left eye but is blind in the right eye. He has sharp boring pains which shoot from the upper occipital region to the back of the left ear. The patellar reflexes are exaggerated. Dr. de Schweinitz, Dec. 17, 1900, found optic neuritis passing into atrophy.

Dr. Keen, Jan. 30, 1901, made an osteoplastic flap over the left parieto-occipital region. The dura was very tense. Four small openings were made in the dura, but nothing abnormal was discovered. The brain was punctured in the attempt to reach the lateral ventricle and the attempt probably was not successful. The piece of bone was removed entirely. The patient was discharged February 18, almost entirely relieved of his headache.

At Dr. Keen's suggestion, I made inquiries regarding the present condition of this man and received the following letter, dated April 20, 1906: "I am wonderfully improved and relieved as to pain, can not see except to distinguish between night and day, have not been bedfast for a year or more, at intervals have severe pain, say every week or two, lasting from twelve to twenty-four hours, after which brain is very sore. Since last July have been having a discharge of the left nostril, of a watery-like fluid, since that the pain is not quite so severe."

CASE 2.—Feb. 5, 1903. E. B., aged 37. During the summer of 1894 a small tumor developed in the scalp on the posterior portion of the right parietal bone producing headache and a sensation of pressure. In the summer of 1895 this mass was removed. His physician stated that it was a fatty tumor. All the pain and pressure symptoms disappeared and he was perfectly well.

After several months the headache and pressure sensation gradually returned; simultaneously with the onset of the headache his eyesight began to fail, and for the last two months he has been partly blind. He has had frequent vomiting, but he attributes this to the iodids. Ataxia was noticed in the finger-to-nose test. His gait is ataxic with a tendency to fall to the right. Lateral movements of the eyeballs are ataxic. Patellar reflexes are minus. Dr. Sweet found papillitis passing into optic atrophy in both eyes.

Feb. 11, 1903, Dr. Keen exposed the cerebellum over nearly one-half of the right half of the occipital bone. The dura was extremely tense on palpation. The patient was discharged ten days after the operation entirely relieved of his headache and with the wound healed.

Dr. John T. Howell wrote to me, April 23, 1906, that the patient died in a hospital in England, July, 1904, after an operation in February of the same year. The skull was opened above the ear and a large tumor was taken from the brain. After returning from the Jefferson Hospital, in 1903, the patient's improvement was of short duration.

(To be continued.)

PHARMACOPEIAL OR PROPRIETARY PREPARATIONS: WHICH?

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The medical profession is confronted with the difficult task of providing an effective method of checking the practice in vogue with many of its members of prescribing and recommending various proprietary remedies, many of which are most fraudulent.

It is sometimes difficult to draw hard-and-fast lines regarding what really constitutes an ethical preparation in contradistinction to a so-called "nostrum." It is not good practice to condemn *in toto*, with one stroke, all proprietary preparations, for undoubtedly ethical, non-ethical and even many nostrums possess some therapeutic properties, since in the composition of most of them certain well-known drugs are used

Irrespective of the composition and therapeutic value of the medicament, the medical profession brands as nostrums all which make claims to possess curative properties wholly at variance with well-known laws of drug administration. At times the physician is greatly perplexed and confused by the vast array of preparations which are offered, recommended and extolled for the treatment of various disorders and maladies, and through this uncertainty he has at times been led to prescribe proprietary preparations when in reality he has been of the opinion that he was recommending and prescribing strictly pharmaceutical remedies.

It would be an excellent plan if both practitioners of medicine and members of the pharmaceutical profession would look very carefully into the composition and combination of all new chemical, synthetic and Galenical preparations (not excluding "patented" nostrums which are from time to time offered to physicians as valuable therapeutic agents), would examine the preparations and their literature very carefully and would report the findings to the various medical or pharmaceutical societies. Then, should the preparations show any extraordinary merit, they might devise preparations of equal efficacy, if not superiority, and probably at very much less cost to the consumer.

Our standard, the United States Pharmacopeia, has already shown us the way and can always be our guide. For instance, at present there is on the market a great and ever increasing number of acetanilid combinations, differing very little in composition, but under very different and fanciful names. In order to avoid this confusion of names, and in order to harmonize the medical profession, the committee of revision of the United States Pharmacopeia has ordered incorporated into the United States Pharmacopeia the preparation known as *pulvis acetanilidi compositus*. Therapeutically it matters very little if in all these various preparations the amount of citrate of caffein is 1/50 grain more or less, or if the amount of bicarbonate of soda is ½, ¾ or 2 grains in each dose, or if the alkaline salt be bicarbonate of soda, or potassium carbonate, or carbonate of ammonia, each of which is added simply as a solvent for the acetanilid. The same rule could be used in all similar preparations which are now or may be offered.

Another example: Since the reintroduction[1] of earth into the materia medica as an antiphlogistic application a number of preparations with fanciful and arbitrary names—names, in most instances, suggestive of an antipyretic—have been offered to the medical profession, and here again, in order to extricate the physician from this chaos, the United States Pharmacopeia has come to the rescue and has formulated and offered to the profession a most efficient and reliable combination in "cataplasma kaolini."

It has taken many years to bring the different liquid preparations of opium, which at various times were extolled by irresponsible vendors and charlatans as boons to humanity, to assuage suffering, under a distinct class. Tinctura opii, tinctura opii camphorata and tinctura opii deodorata of indefinite strength were for years sold

1. The use of earth or clay as a topical application is as old as medicine itself. Applications of earth or clay or of earth mixed with oil or fat were the only remedies used on painful surfaces by the poor in ancient times. Then followed the use of earth and molasses, hot or warm sand or salt, then bread and milk poultices, linseed meal, and now it is popular to use earth and glycerin.

under various names by ignorant and unreliable persons, a very dangerous practice, considered from the present standpoint of drug administration. Tinctura opii of indefinite strength was then generally known as laudanum, Abbe Rousseau's drops, tinctura thebaica, tinctura meconii.

Tinctura opii camphorata still has some adherents, especially among the laity, under the old names of Bateman's pectoral drops, Godfrey's cordial, paregoric, Schultz's antispasmodic drops, while tinctura opii deodorata is still occasionally prescribed by old practitioners as McMunn's elixir. Now the therapeutic value of all these different preparations of opium depends on the definite percentage of the alkaloid morphin present in the various grades of the drug used. The various pharmacopeias of the different nations, and especially the U. S. Pharmacopeia, have directed that, in order to secure uniformity in medication and reliability in results, all grades of opium used in the preparation of the various pharmaceutical preparations containing opium must conform to a standard of at least 12 per cent. of morphin assayed in the grades of opium used. In times gone by, when the different preparations of opium were vended under these many different names, they were all more or less unreliable and even dangerous, as they were prepared without any knowledge or regard to the amount of morphin contained in the drug. It is well known that some grades of opium assay as low as 1 per cent. and others as high as 16 per cent. and even higher. Scores of other and of similar examples can be mentioned.

Tinctura aloes et myrrhæ, under the name of Elixir Paracelsus, was known in remote times. Tinctura benzoini composata as a topical remedy had a wide reputation under the euphonious names of Friar's balsam, Turlington's balsam. Linimentum saponis was known as Stear's opodeldoc, infusum sennæ compositus as Vienna draught, not to mention Dover's powders, Donavon's solution, Labarraque's solution, Goulard's extract, Basham's mixture and many others.

Take, for example, the various combinations and mixtures of cod-liver oil which are now on the market and with which most physicians are familiar either through the medium of the daily press or through the advertising columns of medical or pharmaceutical publications, by the liberal supply of samples or by waste-basket literature. The literature is usually very adroitly worded, calling the attention of the physician to a pleasant and palatable preparation of cod-liver oil, and the physician who prescribes these preparations is flattering himself that probably in a given case of pulmonary affection, or in the convalescence from an infectious disease, or perhaps in the after-treatment of typhoid or pneumonia he is giving a tissue builder, a nutrient, a food in the form of an elegant cod-liver oil medication, when, as a matter of fact, he is doing nothing of the kind. It is not even indicated in the literature or on the label that the preparation contains cod-liver oil, although the words cod-liver oil appear in glaring big type. What the circular or printed matter generally says is: This preparation *represents the value* of 25 per cent., 33 per cent. or 50 per cent. of cod-liver oil. But it does not say that it contains a minim of cod-liver oil. [The alcohol soluble admixtures of cod-liver oil, consisting of biliary acids and bile salts, trimethylamin, volatile ammonia, some fatty acids and traces of iodin, phosphorus and phosphoric acid, sulphur and sulphuric acid, with some coloring matter wholly inert, is made by the addition of expectorants, anodynes and corrigents into a pleasant-tasting elixir, cordial or tonic, but not a trace of cod-liver oil can be found in it.] These preparations may possess some therapeutic properties and undoubtedly may be very useful in the treatment of bronchitis and in pulmonary affections generally. Similar preparations, but of definite strength and uniformity, may be devised if the profession must have such combinations.

At present, by means of samples, circulars and pamphlets, through the public press and in some of our journals and magazines intended to be read at the fireside and in home circles, even by some of our medical publications, various preparations are advocated and recommended in the treatment of real or imaginary uterine diseases and are usually mentioned as uterine tonics. Although some make claims for good wholly unwarrantable, still a few grains of truth may be found in all the chaff. Reliable and honest pharmaceutical houses have taken the cue and have formulated preparations, some of undoubted merit, which may be used with more or less good results in the treatment of the various uterine disorders. These pharmaceutical houses have sampled the medical profession liberally, both by the way of trial medication and printed matter, but especially the latter, and from this practice the physician has acquired the pernicious habit of prescribing these so-called uterine tonics. In the National Formulary, a book which may be called an appendix to the United States Pharmacopeia, and which is compiled for the purpose of furnishing to the medical profession good and reliable formulæ for all unofficial preparations, such as physicians may unhesitatingly prescribe, a good and an efficient combination suitable as a uterine tonic may be found.[2]

If the physician would devote about half an hour each week looking over the United States Pharmacopeia, a good dispensatory, the National Formulary or a standard work on materia medica or therapeutics, he would soon acquaint himself with good, reliable and accurate formulæ and remedies, preparations which he need not hesitate to prescribe; preparations on which he could rely at the bedside, where, after all, the supreme test of the physician's skill must be demonstrated; and instead of continually racing after strange gods it would eliminate from his mind all the various uncertain compounds and mixtures—nostrums—with which he is now burdened.

Such time would be well spent. It would familiarize the physician with many a good medicament and teach him its composition, and, most important of all, it would teach him what he might expect from it therapeutically. The difficulty lies in this: the average physician devotes too little study to materia medica and therapeutics. A better acquaintance with the United States Pharmacopeia and with materia medica and works on therapeutics is most essential in combating the ever-progressive proprietary medicine evil.

170 Colorado Ave.

2. Elixir viburni opuli compositum, in the National Formulary, is as follows:

Fluid ext. viburnum opulus	f. ʒiv	38
Fluid ext. trillium	f. ʒiss	75
Fluid ext. aletris	f. ʒiv	38
Compound elixir of taraxacum	ʒxi	330

Pilocarpin.—Dr. S. West employs pilocarpin in both uremic and diabetic coma, giving from 1/12 to 1/6 of a grain hypodermically and repeated at intervals. He has never seen anything but good come of it. Pilocarpin is more reliable and less dangerous, he thinks, than the infusion of jaborandi.—*Clinical Journal*, May 30, 1906.

Clinical Notes

TWO CASES OF INFECTION WITH TÆNIA NANA IN THE PHILIPPINE ISLANDS.

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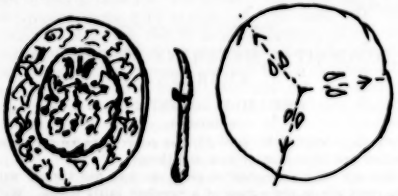
During my tour of duty in the Philippines, two cases of infection with *Tænia nana* (*Hymenolepis nana*) came under my care, and a brief outline of the symptomatology in these cases and a description of the ova of the parasite may be of interest, especially in demonstrating the fact that infection with this tapeworm is not infrequent in the Island of Luzon and that the damage to the host may be severe.

NARRATION OF CASE.

The first case under observation was a private of E troop, 8th U. S. Cavalry. After the recent epidemic of Asiatic cholera in and around Manila, one squadron of the 8th cavalry was stationed along the Mariquina river, from which stream is derived the water supply of Manila, to guard the river from pollution. E troop took station at Mariquina, a town five miles from San Mateo.

CASE 1.—The patient had marched with his troop from Fort William McKinley to Mariquina and soon after arrival was taken sick. Forty-eight hours later I saw the man. As several deaths from Asiatic cholera had occurred at Fort McKinley just before this troop left, it was feared that this man might have the disease.



Figs. 1, 2, and 3.—Ovum with inner membrane surrounding embryo. Hooklet with rounded extremity for musculature. Diagram showing arrangements of hooklets in three planes.

Symptoms.—When I reached Mariquina the man had nausea and vomiting, with frequent loose and watery stools; intestinal cramps, not very severe, and no cramps in the muscles of the limbs. He was very weak, but there was no collapse and the pulse was fairly strong and regular. Temperature: Mouth, 99 F.; rectum, 100.

Treatment.—The patient was transferred to the hospital at San Mateo by ambulance, and after taking a little cracked ice and brandy the nausea and vomiting were relieved.

Stools.—The first stool was examined. It was watery with a few flakes of brownish material scattered through it; not at all like the rice-water stools of cholera. Under the microscope there were seen epithelial cells in various stages of degeneration, fatty acid crystals, and bile-stained débris. The usual products of severe intestinal inflammation were not present. Hundreds of ova (Fig. 1) were seen. Each stool was saved (male fern had been administered on the second day after admission) and search made for the worms, but none could be found, and, after the first morning of the patient's admission to hospital, no ova were found. The intestinal antiseptics and purge administered before I saw the man, it is supposed, caused the expulsion of the worms; the stools were not carefully examined until the patient entered the hospital. He gained rapidly in strength and weight and was soon returned to duty.

CASE 2.—The second case was under treatment one month later. The man is a member of the hospital corps.

History.—He gave a history of chronic diarrhea in 1898, contracted while in Puerto Rico. He was operated on in 1904 for appendicitis. For several months he has been troubled with constipation, loss of appetite, coated tongue, and distended and slightly painful abdomen. He is nervous and does not sleep well, and has abdominal distress after eating.

Examination of Stools.—The stools were formed, dark-yellow in color, with flakes of mucus scattered through them. Under the microscope, ova in every respect similar to those noted before, were found; and, also, many *Cercomonas intestinalis*. The man was put to bed and given a preliminary purge and two 3 c.c. doses of male fern. After several hours the stools were examined and about forty unbroken *Tænia nanæ* were obtained. Several of the worms were brought out by the purge.

THE OVA.

The ova are transparent and not bile stained, oval, almost round, in shape; about 30 microns in the short diameter and 35 microns in the long. The shell is very thick, not rigid, and not radially striated, and contains here and there coarse granules. Immediately surrounding the embryo is a delicate membrane (Fig. 1). The protoplasm of the embryo contains many granules of various sizes. Six hooklets are attached to each embryo (Fig. 2); these are arranged in pairs and their points almost touch the inner membrane. The curved points

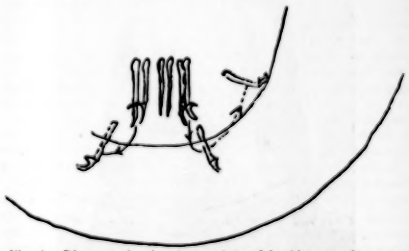


Fig. 4.—Diagram showing how points of hooklet are thrust into the shell and then swept around through it.

of the ends of the hooklets are directed from the center of the group, in three directions. The arrangement of the groups of hooklets, and the fact that in several of the ova the hooklets had perforated the membrane and were projecting into the shell almost to its outer surface (Fig. 4), and that in others the points of the hooklets were widely separated from each other and some distance from the membrane, suggested to me that perhaps the function of these hooklets was to free the embryo from the shell. Diligent search was made to see if any motion of the embryo could be observed. At length one embryo was found in active motion within the shell. The points of the hooklets were first drawn together and the whole armament thrust against the adjacent part of the surrounding membrane and into the shell; then the hooklets made a circular sweep around a point near their blunt extremities as a center, in three planes at angles of 120° to each other (Fig. 3). This thrust and sweep was repeated at the rate of about once in ten seconds. The motion continued for about one hour, at the end of which time the envelope had been cut through about three-fourths of its thickness. Motion then grew slower and soon ceased altogether. During the motion of the hooklets, motion of the protoplasm of the embryo could be traced by the granules contained

therein. No embryos free of their shells could be found. This movement was observed in the embryos passed *per anum* by both patients, also in those expressed by cover glass from the fresh worm obtained from the second case.

The parasite is found in several of the lower animals, especially rats, in which animal, it is stated, an intermediary host is not required.

ROCKY MOUNTAIN SPOTTED FEVER.

CHARLES E. MOOSER, M.D.
RENO, NEV.

I read with interest two articles on Rocky Mountain spotted or "tick" fever in THE JOURNAL, July 7, 1906. This fever exists in Nevada, but cases do not seem to be

so numerous or so fatal as those occurring in Idaho, Utah and Montana. Here they occur almost, if not exclusively, among sheep-herders, so I am somewhat surprised that Dr. H. N. Mayo does not even mention this class, though they are plentiful in the states named.

About three years ago my first patient with "tick" fever came to me. I did not recognize the condition as such, hence can not say whether the patient, a sheepman, had been bitten by a tick. The infection was severe and I feared that I would lose the patient. He got up at the end of eight weeks, and recovered slowly thereafter, and in time became entirely well. The treatment in this case was symptomatic, as outlined by Dr. Mayo.

Within the past two months I have had six cases, five Frenchmen and one Spaniard, all sheep-herders. They came from three different camps (one of which seems to have acquired a reputation for having such cases yearly), two from each camp. Without exception all the men gave a history of one or more very recent tick bites. All the patients were severely infected, two especially so. None of the cases terminated fatally; all were typical cases. The Spaniard's case was the most severe, perhaps because he came to me later than the others, having tried to "fight off" the trouble. He came in an extremely emaciated condition, resembling the pictures of Cuban reconcentrados published in the papers during the Spanish war, and in marked contrast to the puffed features of the others. A very distressing phase of his illness was a cough resembling that of an advanced case of phthisis. Examination of lungs was negative and the results justified the belief that no serious lesions were present, as the cough disappeared with the eruption.

Unfortunately no special blood or other tests were made, owing to lack of facilities.

In great contrast to the first case mentioned all of these patients were practically well within three weeks—out of bed, etc.—final recovery being very rapid thereafter. With but slight exceptions, calling for some special drug, all the patients were given practically the same treatment. An initial dose of calomel and jalap, followed next day by quinin, 30 grains twice daily for one week (a little longer for the Spaniard), then in gradually diminishing doses until the temperature remained normal for two days.

Strychnin sulphate was given when necessary. A seidlitz powder or two was given every morning. Sponge baths were also given. No quinin was given in my first case. Other cases with which I am familiar, and in which quinin was omitted or given in small doses only, lasted, as did my first case, about two months. In those in which large doses were used the majority of patients recovered in from ten days to two weeks. The accompanying illustration of the patient in my last case (not a very good photograph) shows the typical eruption.

CONGENITAL MEMBRANE IN THE NASO-PHARYNX.

RICHARD H. JOHNSTON, M.D.
BALTIMORE.

Patient.—Mrs. M. E., aged 35, was referred to me for examination and treatment of nose and throat.

History.—For a number of years she had had trouble with the right ear in the nature of a purulent otitis media. With the removal of the ossicles she experienced great relief from certain subjective symptoms while the discharge was reduced to a minimum. She complained of dryness of the nasopharynx which had existed for a long time and of disagreeable sticking and gagging sensations which combined to make life miserable. From her efforts to remove the secretion, nausea and vomiting ensued. There was constant tinnitus in the left ear.

Examination.—The nose showed nothing abnormal with the exception of a dryness of the mucous membrane. The pharynx was dry and parched and covered with a layer of thick grayish secretion which apparently came from the nasopharynx. The examination of the latter revealed a curious condition of affairs. After cleansing the posterior pharyngeal wall the mirror could be used with ease. Coming down from the roof of the nasopharynx and extending entirely across the cavity was a distinct membrane which divided the space into anterior and posterior parts. The membrane had its origin behind the openings of the Eustachian tubes, neither of which was visible. About the center of the membrane was a round perforation extending a little further to the left than to the right. Through the hole could be seen the lower two-thirds of the septum, the inferior and the middle turbinates on the left and a little to the outer side of the septum on the right. Above and to the right, midway between the opening and the lateral wall, and at the point where the membrane came off from the roof, was a second elongated opening much smaller than the first. The margins of both openings were perfectly smooth and clear cut. The membrane passed downward and became gradually lost on the posterior wall of the soft palate.

No tuberculosis or specific history could be obtained. From the large extent of membrane and from the clear cut margins

of the openings, there can be no doubt that it was congenital. The nose was in fair condition and it seems proper to assume that the partial obstruction to nasal breathing had contributed in part at least to the extreme dryness of the throat. A proposition to attempt the removal of the membrane was declined by the patient.

Royet[1] has an article on insufficient nasal breathing caused by bands of tissue extending from the Eustachian tubes to the posterior wall of the nasopharynx. He cites two cases in which the destruction of such bands restored nasal breathing and relieved tinnitus of long standing. In a third case the bands adhered to the soft palate. In this case the mirror could not be used so it is impossible to say just what the character of the bands was.

Molinie has reported two cases of annular contraction of the nasopharynx. Courtdade in 1903 related that he had long recognized the fact that a cause of pharyngeal obstruction was the partition of the nasopharynx by filament-like bands.

Royet concludes: 1. That bands of tissue from the tube to the posterior pharyngeal wall can cause obstruction to nasal breathing which in most cases is slight. 2. In the majority of cases they are associated with other lesions of inflammatory origin in the nasopharynx and contribute their part in diminishing the permeability of this canal. 3. In both cases their destruction is indicated.

In a somewhat careful review of the literature I have not found a case like the above. Complete atresia of the nasopharynx with atresia of the nose has been recorded as giving rise to great deformity of the face with impaired mental development. Escat in his work on diseases of the pharynx pictures two such cases. They are very rare. My patient did not get sufficient air through the nose on account of the membrane and the dryness of the mucous membrane of the pharynx was certainly due in part to mouth breathing. It is probable that the tinnitus and the suppuration in the middle ear were connected with the formation in the nasopharynx.

The proper treatment was undoubtedly the removal or the tearing through the abnormal tissue to give better nasal respiration.

919 N. Charles Street.

1. Royet: Revue Hebdom. de Laryng., etc., Feb. 3, 1906.

THE FLUOROSCOPE IN DIAGNOSIS OF ANEURISM.

G. R. GAGE, M.D.
AND
H. H. HEYLMUN, M. D.
HUTCHINSON, KAN.

History.—W. H., aged 29, married, gave a negative family history. For 12 or 13 years, until two months ago, his occupation had been that of a steam hammer driver. On an average of probably 5 times a day he would throw his weight on a heavy lever, alighting on the abdomen. He had never had any illness from the age of 14 to 24; he had been a hard drinker; was treated 8 years ago for specific trouble, which showed as a row of indurated ulcers, extending around the corona; this condition baffled his physicians for 10 months, but yielded immediately to the application of dry calomel. No suspicious symptom developed since.

Eight years ago he noticed pain in his left hip and leg, which rapidly became very severe, compelling him to walk with a cane for the next four years, though not preventing him from attending to his work in the machine shop. For the past four years the pain has been present more or less constantly, though not so severe as formerly, and not severe enough to necessitate the use of a cane. For the past year he has suffered from a heavy boring paroxysmal pain in the abdomen, which would sometimes be absent for a day or two, but most of the time present and getting progressively worse.

Appetite was fair; there was no trouble with digestion, no nausea and bowels were regular. There was some emaciation; patient was pale, expression indicated suffering.

Examination.—Examination of abdomen revealed pulse of 94, temperature normal, and marked condition of arteriosclerosis. There was tenderness over the great sacrosciatic notch. There was what appeared to be a spasm of the recti muscles; with head and knees elevated a tumor, hard and immovable, was made out just to the right of the umbilicus. The tumor was pulsating and seemed to possess that peculiar expansive pulsation indicative of aneurism. On auscultation a blowing sound was heard somewhat like that of a mitral regurgitation. This bruit almost entirely ceased after the patient had been in the recumbent position a few moments. Comparing the anterior tibial pulse with that of the radial, the former was found to be about one-third of a beat behind the latter. There was no swelling of the ankles or dilatation of the superficial veins of the abdomen, nothing to indicate interference with return circulation.

As a possible aid to diagnosis, the patient was placed in front of an *x*-ray tube requiring a 7 inch spark gap. By the aid of the fluoroscope a dark shadow about 3 inches across laterally was discerned at the site of the tumor. By close attention one could readily make out an expansion and contraction of this shadow corresponding with the pulse beat; this expanding and contracting shadow had very much the appearance of the heart as seen through the fluoroscope and immediately appealed to us as being a diagnostic procedure of great value in cases in which aneurism is suspected.

In this case the diagnosis of aneurism of the abdominal aorta was made and the family acquainted with all the facts of the case, also the possibility of a mistake in diagnosis which could be positively determined only by an exploratory incision.

Operation.—Consent of the patient and family was readily given and the patient prepared for operation. While under the anesthetic, and the abdominal wall relaxed, an elevation was seen at the location of the tumor. An incision was made through the right rectus muscle, directly over the most prominent point of the tumor, and after working gently through some slight adhesions, an aneurism half as large as a teacup was found. It appeared to be fusiform at its lower extremity, which was just above the bifurcation; the right side was lobular and extended fully an inch to the right of the median line. Owing to the fact that the patient took the anesthetic very poorly, no further exploration was made, and the wound was closed.

In this case there was a positive history of alcoholism and a probable history of specific trouble, either one of which may have been the cause of the arteriosclerosis. The continued bruising of the vessel at this particular point, no doubt, had to do with causing the aneurism.

The point in the case which seems of the most value to us, and the one to which we desire to call the attention of the profession, is that of the use of the fluoroscope. These patients are usually more or less emaciated and afford excellent subjects for *x*-ray work, and the expansive pulsation of the tumor is much more perceptible to the fluoroscope than it is to the finger tips.

Naming of Carbon Compounds.—In the *Pharmaceutical Review*, July, W. A. Puckner, Chicago, publishes a compilation "of terms, syllables, prefixes and endings commonly employed in the naming of carbon compounds," for the use of students in pharmacy and medicine, and for pharmacists and physicians. Chemical terms which are usually unintelligible to the average physician are explained in simple language, and the derivation is given.

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[For other information see second page following reading matter.]

SATURDAY, SEPTEMBER 1, 1906.

FEATURES OF LIFE INSURANCE EXAMINING WHICH DEMAND CORRECTION.

In the radical reformation which is taking place in some of the life insurance companies as the result of the recent investigations and the exposure of gross irregularities, it is to be hoped that the status of the medical examiner will be considered, the importance of his duties more keenly appreciated, and correction made of conditions which have sometimes made it difficult for the examiner to do his work without violating his sense of decency and self-respect. The abuses which we have in mind have grown up, for the most part, in connection with high-pressure methods of soliciting new business, arising from the intense competition among the companies and the eagerness to pile up a large surplus. It is evident for the last few years the agency department of many of the companies has been the dominant factor, and the insistent command has been "get new business," at whatever cost and at whatever sacrifice to the other interests of the company; "get new applications, even by force or fraud, if such be necessary." It is equally evident that such a course is not conducive to the best interests of the policyholders, who are the real owners—the stockholders of the company.

All this is of interest to the examiners because they have unwittingly been made parties to these methods in a variety of ways. Until recently in many companies the appointment of examiners was largely controlled by the agents and this power was often made use of to secure applications from physicians under the promises of appointment to an examinership. How detrimental this was to the interests of the other policyholders is well shown by a statement recently made by the medical director of one of the largest of the American companies. The death losses for a period of five years, during which the examiners were recommended by the general agents, were compared with the losses for a similar period immediately following a change to the plan of appointment entirely independent of the agency department. It was ascertained that the actual saving to the company through lessened mortality under the latter plan had been sufficient to pay the total expense of the medical department during that period, including all examination fees, salaries of medical officers and other expenses.

The interests of the agent, the placing of his risks and securing his commission are, in a sense, antagonized by the interests which the examiner is appointed to protect. The cordial relations which should exist between the examiner and the agent are not promoted by ignoring this fact, but by its frank recognition, and by the confidence of the agent that the physician is capable and honest and will always give his applicant a "square deal." It is essential to such pleasant relations, as well as to the efficiency of the examiner, that he should occupy an absolutely independent position in reference to the agent, being responsible directly and only to the medical department. Any arrangement which enables the agent in any way, directly or indirectly, to coerce the examiner is unfair to the physician and bad for the company. Such coercion is possible when two or three examiners occupy the same territory for one company, if the agents are permitted to take their examinations to the examiner of their choice. It is possible in such a case for the agents to take most or all of their cases to a favorite examiner, making his income from this source a large one, while the other examiner has little or no business. In such instances the examinations should be made independent of the agent either by having a chief examiner to whom all applications are submitted and who assigns them equitably, or by placing the examiners on a salary (usually objectionable on other grounds), or through a pooling of the examinations by the physicians themselves.

We shall have something more to say along these lines in subsequent issues.

CAISSON DISEASE.

It has been demonstrated by means of experiments on animals that the serious results to health which are frequently the accompaniment of the duties of professional divers and of those who work in caissons must be attributed to a too rapid rate of the process of decompression on return to the normal condition. Up to a few weeks ago the most reliable data with regard to the disease had been collected by M. Hersent, a French engineer. In 1894, at Bordeaux, he had carefully noted and discussed the influence of high air pressure on the human subject in the persons of three workmen who had voluntarily submitted themselves to the ordeal in the interests of science. These men were enclosed in a steel chamber, and the experiments were conducted under the observation of a commission composed of members of the Bordeaux Faculty of Medicine. The defects of M. Hersent's investigations lay in the fact that no scientific records could be taken on the spot, as would have been the case had a trained scientific experimenter been in the chamber.

Dr. Leonard Hill, F.R.S., and Mr. Greenwood, M.R.C.S., two Englishmen, have been recently engaged in personal experiments[1] of a like nature with the object

1. Proceedings of the Royal Society of London, February, 1906; Lancet, June 30, 1906.

in view of clearing up some obscure points. They caused to be constructed a large steel cylinder in which one or the other was shut. This had a capacity of 42.2 cubic feet, with a motor-driven pump for effecting compression and taps for decompression. It may be said that both the experimenters were in excellent physical condition at the commencement of the investigations. Drs. Hill and Greenwood underwent varying degrees of pressure in their cylinder, and each wrote a diary of his sensations. The highest pressure to which Dr. Hill was subjected was 75 pounds, while Mr. Greenwood underwent a pressure of no less than 90 pounds. Neither suffered from serious after effects, not even when the maximum pressure of the series was reached, one corresponding to a water depth of 210 feet. The point especially emphasized was the vital importance of a gradual decompression period. In fact, the authors assert that "the responsibility of those who allow short decompression periods is clear; every death or case of paralysis from air embolism must be set down to the negligence of the contractor." It is also pointed out that, during the process, it is essential to exercise well every muscle and joint of the body, and to change the posture frequently in order to maintain adequate capillary circulation.

The experimenters faithfully recorded the physiologic changes induced while under pressure in the chamber. It was noticed, among other effects, that at three atmospheres the vibratile movements of the tongue and lips practically ceased. All distinct sensations of pressure in the ears was relieved as soon as the pump ceased its strokes, and the pressure in the chamber became constant. The final conclusion arrived at was that an adult may be safely submitted to a total barometric pressure of at least seven atmospheres, provided that the precaution of making the period of decompression gradual be strictly observed.

There is probably more caisson work going on, as a rule, in the United States than in any portion of the globe. The danger attending the work was much in evidence during the construction of the last suspension bridge in New York, when several of the workers suffered severely from "caisson disease." The investigations of the English medical men are, therefore, valuable, and their advice as to the decompression period should be taken to heart by all large bridge builders in America.

MARITAL CONSANGUINITY AND DEFECTIVE CHILDREN.

There are not a few, even of physicians, who are apt to consider that the old-time ecclesiastical regulations forbidding the marriage of blood relatives, which have become the basis for most of our modern legislation on this subject, are founded on moral rather than on good physical grounds. There is a natural feeling of repugnance against the marriage of very near relatives, but there is an impression, now altogether too general, that cousins may marry with impunity. For those who entertain any such idea the report of the United States Census Bureau on the blind and the deaf, which has recently been published by the Government Printing Office, will provide material for very serious consideration. This report is written by Dr. Alexander Graham Bell, better known popularly as the inventor of the telephone, but who has a world-wide reputation as an expert of scientific thoroughness with regard to deafness and its causes and conditions.

Some years ago Dr. Bell succeeded in demonstrating that nearly three times as large a proportion of the deaf children born of parents who are cousins are congenitally deaf as of children born of parents who are not thus related. This average is confirmed by the statistics collected very carefully for the present census report, and statisticians in other countries have found practically the same proportion, occasionally even worse.

With regard to the blind the state of affairs as pictured by the census report is even more deterrent. Of the blind who were the offspring of consanguineous marriages, meaning that the parents were related as closely as cousins, proportionately 3.67 times as many are born blind as in the case of the blind who were children of those who were not so related. In the case of both the deaf and the blind the census figures show that 4.5 per cent. of all cases are the offspring of parents who are cousins. With regard to the blind, altogether some sixty thousand cases are analyzed, so that there would seem to be no doubt that the conclusions arrived at are amply justified and that the results obtained are not mere coincidences nor to be attributed to a narrow view of the question.

In discussing the statistics, Dr. Bell points out that the view of the situation obtained is likely to be better, instead of worse, than is actually justified by the real state of affairs. It can be readily understood that many persons, when questioned as to the consanguinity of parents, either refuse to answer or occasionally even prefer to deceive rather than to admit the possible influence of this fact in their condition. From not a few of the deaf and blind it has been impossible to obtain definite statements with regard to parental relationship. All such cases have been excluded from the statistics. It seems not unlikely that most of these cases were really examples of parental consanguinity, and they would make the expectation as to defective children even more appalling than it is. In not a few cases, as every physician knows, the consanguinity of parents is deliberately concealed from children whenever the surrounding circumstances (as, for instance, residence at a distance from other relatives) allows the subterfuge.

Already the number of defective children is so much on the increase from the stress and strain of large city life that every possible factor which adds to the probability of the reproduction of further unfortunates must be re-

moved. Medical examinations of school children show that defects in the special senses are particularly frequent. If parental consanguinity can, as is proved by these statistics, add to the number of the totally blind and deaf, then it must be even more important as an element in the causation of such minor defects in the special senses which are serious handicaps in the battle for life. If this state of affairs is true for blindness and deafness, it can be concluded that it is also true for all the complex physical mechanisms which underlie the most important functions of human life. German statistics show that stutterers, for instance, are more common in the families of related parents than among the ordinary population. Various muscular weaknesses of a hereditary character must be placed in the same category.

It seems clear, then, that the marriage of cousins should be discouraged in every possible way. The possibilities of offspring being deformed or defective are already sufficiently appalling to make prospective parents uneasy. To increase the chances of such an unfortunate event by three or four times is enough of itself to give the most careless person pause. About one-half of the states in the Union have laws forbidding the marriage of cousins by blood and it would seem that their example should be followed by the other states.

THE DECREASE OF DRINKING AMONG PHYSICIANS.

A religious paper claims that drinking is on the increase among physicians, and in support of this statement it refers to a banquet that was given under the auspices of the staff of one of the hospitals of a large city west of the Mississippi River, at which, it was reported, only four of the fifty physicians present abstained from drinking. The report may be true, but we can not accept the conclusion it is quoted to support. We do not believe that drinking habits are on the increase among physicians. There are many who drink some and some who drink too much on occasions or even habitually, but we believe that there were many more of this kind a generation ago, and as the advocate of temperance the medical profession is much more to the fore at the present time than at any previous period. The statement is one of those unfortunate generalizations based on insufficient knowledge of the facts, and one which a religious journal, of all others, should be most careful to avoid.

THE CASE OF "DR." CARSON.

The *Independent*, a weekly journal published in Kansas City, is a good running mate for *Collier's Weekly* in the fearlessness with which it exposes frauds and fakes of all kinds. The newspapers of Kansas City have not yet reached that commendable state in which they exercise discrimination in the publication of objectionable advertising. This is particularly true so far as medical advertisements are concerned. Mr. George Creel, the editor of the *Independent*, has been giving considerable space to the exposure of the doings of quacks. In a recent issue he devotes some space to one "Dr." C. H. Carson, who poses as a "vital healer" and whose place of residence, where all the "cures" are effected, is known as the Temple of Health, or, as the *Independent* puts it, the Pimple of Wealth. The treatment employed by "Dr." Carson consists of the laying on of hands, blessing tissue paper to place on tumors in women's breasts, placing bits of torn paper in an envelope, with the warning that they must not be exposed to light, etc. It would appear that "Dr." Carson and his methods ought to be made the objects of a vigorous investigation by the State Board of Health. So far as we can learn, the "doctor" is not licensed to practice, and if he is not practicing medicine within the meaning of the medical-practice acts of Missouri and Kansas, thus relieving the State Board of Health of any responsibility in the case, the matter ought to be taken up in the interests of the people by the Medical Society of Kansas City. Meanwhile the *Independent* is to be congratulated on its courage. It deserves the support of medical men, as well as of the public.

ALCOHOL AS AN INTERNAL GERMICIDE.

A health commissioner of one of our great cities, according to the newspapers, recently uttered the rather rash advice to use whisky or alcoholic drinks to prevent typhoid in the existing unsafe condition of the city water. It is hardly possible that the advice was given seriously. It was probably merely a facetious suggestion inspired by the local atmosphere of the city hall, but it has been generally taken up by the newspapers and more or less seriously discussed. As an advice to the public in general it is about on a par with the ancient recipe for the cure of the toothache, to "let an omnibus run over your foot." We would not venture to say how much alcohol it requires to kill a bacillus, but it would take a rather unsafe quantity to neutralize any very thoroughly infected water. Alcohol may, in certain conditions, be a useful medicine, but it is rather unreliable as a prophylactic for most diseases.

Medical News

ILLINOIS.

New Sanitarium.—It is reported that Drs. Jeremiah H. Stanley and Carl F. Snyder will establish a modern sanitarium in Freeport.

To Enforce Laws.—The Board of Health of East St. Louis has instructed the Health Inspector to see that conductors of street cars enforce the laws regarding expectoration.

Personal.—Dr. and Mrs. Lyman Ware, Chicago, have returned after four months in Europe.——Dr. Albert H. Dollear, Jacksonville, has been appointed assistant physician of the Illinois Western Hospital for the Insane, Watertown.

Reform in Asylums.—The State Board of Charities, in its quarterly bulletin, states that as a result of its inquiries, the board feels that there is pressing need for a correlation of the energies of the state hospitals for the insane. No two institutions are alike, but in the majority of items of administration, standardization is necessary to elevate the institution to a high plane of efficiency and economy. The hospitals for the insane were found to be topheavy on the custodial side. The superintendents are burdened with business details which pre-

vent them giving sufficient attention to the medical administration. For this reason, the hospitals are more like detention boarding-houses than places for the modern treatment of hopeful cases, and the industrial re-education of chronic types.

Chicago.

Typhoid Fever.—No increase in typhoid fever was reported during the week except in Rogers Park and Maywood. In Rogers Park the cause was attributed to the use of well water, which has been found to contain large numbers of the colon bacillus, and in Maywood the interference with sewage disposal pending the construction of a new sewer, is said to be the cause of the condition.

Deaths of the Week.—The total deaths from all causes in Chicago for the week ended August 25, was 589, 58 more than for the preceding week, and 12 more than for the corresponding week of 1905. The mortality was equivalent to an annual death rate of 14.91 per 1,000. Acute intestinal diseases caused 149 deaths; consumption, 58; heart diseases, 37;; pneumonia, 34; cancer, 32; Bright's disease, 31; and violence, other than suicide, 38.

Heat and Humidity.—During the week ended August 25, 9 deaths were reported as caused directly by sunstroke, but this represents only partially the effect of the prolonged high temperature and excessive humidity. Of the increase of 58 deaths, as compared with the previous week, cancer and heart disease contributed each 12 and acute intestinal diseases 24. It is probable that in these cases the fatal termination was the result of the prevalent weather conditions.

INDIANA.

Added to Faculty.—Dr. Lemenuel W. Famulener, for three years research fellow in pharmacology under Dr. Cushny at the University of Michigan, and for one year a worker with Dr. Mansen in the Statens Serum Institute at Copenhagen, has been appointed assistant professor in pathology at the Indiana University.

MARYLAND.

Baltimore.

College Building to Be Sold.—It is reported that the Baltimore University building on Bard Street will be sold and the institution closed.

Increase of Typhoid.—The usual autumn increase of typhoid is manifest, fifty-five cases of typhoid having been reported last week and eleven deaths.

Acquitted.—Dr. John W. C. Cuddy, charged with causing death by an illegal operation, has been discharged by the grand jury, no evidence being found against him.

Physicians Injured.—Dr. J. Ridgeway Andre, an aged physician, still in practice, suffered injuries, August 21, by a breakdown of his carriage and consequent runaway.

Plan for Extermination of Mosquitoes.—Dr. Bosley, health commissioner, proposes a plan for the extermination of mosquitoes, which includes fines on tenants or property owners who allow water to stagnate in their yards, and makes health wardens and police officers responsible for the conditions and for failure to report violations of the laws. The present municipal agencies are to be employed in this work, so that the plan involves no extra expense to the taxpayers.

Vacation Time.—Dr. Ira Remsen is at Prout's Neck, Maine. ——Dr. George Reuling has returned from Narragansett.——Dr. William H. Howell is at Chebeague Island, Maine.——Dr. James D. Iglehart is at Saranac.——Dr. R. Martin Bruns is at Allenhurst, N. J.——Drs. George W. Mitchell, Robert Hoffmann and Albert Colby are in Paris.——Dr. Amanda Taylor-Norris is at Rehoboth Beach, Del.——Dr. Joseph Blum is at Ocean City, Md.——Dr. William Whitridge is in Rhode Island.——Dr. Howard Kelly is traveling in Europe.——Dr. T. Chew Worthington is taking a trip to Niagara Falls and the Thousand Islands.

MINNESOTA.

Personal.—Dr. F. Dale Smith, Oronoco, was thrown from his buggy July 26, and sustained a fracture of the leg.——Dr. John W. Andrews, Mankato, is taking a trip to Southern Oregon.

Bly Imprisoned.—Dr. Theron H. Bly, Minneapolis, convicted of performing a criminal operation, and sentenced to imprisonment for three years and a half, began serving his sentence in the state penitentiary, Stillwater, August 11.

Scarlet Fever in Eveleth.—The Commissioner of Health of Eveleth announces that there have been 24 cases of scarlet fever in the city, but that the outbreak has been mild and well under control, and that the number of cases has decreased since July 10. Since August 1 there have been not more than nine cases at any time and there are but four existing now.

Bemidji Man Said Not to Be a Leper.—Arndt Reton, classed by the Bemidji physicians as a leper and placed under quarantine far away from the city, made his escape and went to Cass Lake, where he was examined by the physicians, who claim that he is not afflicted with the disease. The two toes which he had lost were amputated as the result of frozen feet two years ago.

Care of Veterans.—Under the direction of Dr. Charles A. McCollom, Minneapolis, chairman of the committee on health and comfort, the physicians of the city organized for special duty the week of the encampment. The entire city was divided into sections and a force of 150 physicians assigned on duty in this division. In cases where public school buildings were used for dormitories a special physician had been placed in charge of each. In all notices sent out, the lodging places and the name and address of the physician in charge of the district was given. Headquarters were opened in the old city hall building for the entire encampment, and two ambulances were secured. Nine stations were established along the line of march and the results showed the great care exercised in the organization of the medical service.

MISSOURI.

Fined for Selling Cocain.—A clerk at the Franklin Pharmacy, St. Louis, on August 14, was fined $20 and costs on the charge of selling cocain to two women. This is the first prosecution under the law for selling cocain without prescriptions therefor.

Hospital Staff Chosen.—At a meeting of the Home Missionary Society of the Methodist Episcopal Church of Springfield, the following staff of physicians for the new Burge Deaconess Hospital was elected: Drs. John C. Matthews, William C. James, George W. Barnes, John W. Williams and John P. Ralston. The attending staff are Drs. Francis E. Ross, Jonathan E. Tefft and William M. Smith.

Cancer Deaths Increasing.—The statistics of the St. Louis Health Department show that cancer is on the increase in the city, notwithstanding the decrease in the total number of deaths. In the year 1903-04, 11,486 deaths occurred, 391 of which were from cancer; in 1904-05, 11,364 deaths, of which 398 were from cancer, and in 1905-06, with only 9,833 deaths, 438 deaths are reported to be due to the disease.

Tenement Board Named.—The mayor of Kansas City has sent to the council an ordinance naming a tenement board of seven, of which Dr. Orville H. Dove is the medical member, together with a communication pointing out the necessity of such a commission. The duty of this board is to investigate the tenements of the city, to report to the Board of Health the conditions existing among the city's poor, and to recommend such ways and means for the improvement of the situation as are thought necessary and practical.

NEW YORK.

Bequest.—By the will of the late Theodore S. Hubbard, Geneva, a bequest of $500 is made to the Geneva City Hospital.

Diphtheria in Watertown.—During July there were 17 cases of diphtheria reported in Watertown. Despite the investigations of the Board of Health no cause could be determined for the disease.

Typhoid Fever.—Corning reported 152 cases of typhoid fever, due in every instance to the use of water from wells. The city water has been analyzed and has been found to be free from all disease germs.——On account of the prevalence of typhoid fever in and around Baldwinsville, Dr. F. P. Sinclair, Lysander, has been authorized by the Board of Health to make a thorough examination of the camps and cottages in the vicinity.

Buffalo.

Hospital Acquires Land.—The Children's Hospital, Buffalo, has acquired a tract of land adjoining the hospital for the purpose of building an extension to the institution.

Personal.—Dr. W. Harry Glenny is at East River, Conn.——Dr. Stephen Y. Howell has returned from the sea shore, Dr. Reuben M. Root from the Muskoka Lakes and Dr. Frank W. Love from Lake Bonaparte.——Dr. Matthew D. Mann will go on a hunting trip to Wyoming and Colorado early in September.——Dr. F. Park Lewis will return from Europe shortly. ——Drs. Irving W. Potter and Roland O. Meisenbach were recently elected on the staff of the German Hospital.——Dr. Harry Mead has been at the Thousand Islands.

New York City.

Trachoma Increases.—It is stated that ten sufferers from this disease have been deported daily from Ellis Island during the last two months, a much larger number than usual.

Personal.—Dr. John A. Billings arrived on the *Baltic*, August 22.——Dr. Henry F. Owsley, Flushing, has sailed for Europe.——Dr. Mary G. Patten is visiting in southern California.

Filtration in Sight.—Bids have been asked for an experimental plant for Jerome Park reservoir. This experimental plant is merely the forerunner of a great filtration plant that will be erected after the experimental plant shows just what the ingredients of New York water are.

Fresh Air Camp.—A fresh air camp has been established by the Association for Improving the Condition of the Poor and is in operation at the foot of Sixty-second Street, for the treatment of infants under 18 months of age. It has accommodations for fifty and every cot is occupied.

Typhoid in Brooklyn.—Since August 1, 76 cases of typhoid fever have been reported to the health authorities of Brooklyn. No definite cause has been found for the unusual prevalence of the disease, but the general belief is that it is due to the inferior quality of the drinking water supplied from the Ridgewood reservoir.

For Tuberculosis Hospital.—Plans have been filed by the Department of Charities for a new tuberculosis hospital to be erected in the Borough of Richmond on land recently purchased near the present City Farm. The buildings will be eight in number, each four stories high, 80 by 137 feet, on the ground plan, and will cost $800,000. This institution will be called the Sea-Side Hospital.

Opposes New Building for Hospital.—Comptroller Metz opposes for the present the erection of new contagious-disease pavilions in connection with the Kings County Hospital. The citizens of the neighborhood are endeavoring to have this hospital removed to a less crowded neighborhood. The Board of Health will ask for the appropriation of $32,000 for the contagious pavilions, and if no better location is available, the extension to the present hospital will be undertaken.

Error in Certificate.—Dr. Simon M. Roth, charged with falsely filling in a death certificate, was acquitted in the Yorkville police court, August 9. His certificate read that the decedent, Lena Schultz, 38 years old, died at 233 East Seventy-eighth Street, but in reality the woman's name was Green, she was 18 years old and died at 138 East Seventy-eighth Street, the residence of a midwife. Under the new law it is not necessary to certify as to the direct as well as the indirect cause of death.

Vital Statistics for Second Quarter.—The report of the Health Department for the quarter ended June 30 shows 25,692 births and 18,928 deaths, equivalent to an annual death rate of 18.29 per 1,000. There were 12,467 marriages, a gain of 1,584 over the same period of last year. Pulmonary tuberculosis claimed 2,319 victims, tubercular meningitis 221 and other forms of tuberculosis 113. There were 1,527 deaths from pneumonia and 1,223 from violence. Of children under 5 years of age there were 6,237 deaths, of which 801 were due to summer complaint. Of the deaths 8,967 occurred in the tenements.

Contagious Disease.—There were reported to the sanitary bureau for the week ended August 11, 371 cases of tuberculosis, with 173 deaths; 128 cases of diphtheria, with 16 deaths; 125 cases of measles, with 4 deaths; 116 cases of typhoid fever, with 16 deaths; 56 cases of whooping cough, with 11 deaths; 9 cases of cerebrospinal meningitis, with 10 deaths; 53 cases of scarlet fever, 8 cases of varicella and 1 case of smallpox; a total of 867 cases with 230 deaths. There were reported to the sanitary bureau for the week ending August 18, 376 cases of tuberculosis, with 176 deaths; 151 cases of diphtheria, with 20 deaths; 113 cases of typhoid fever, with 10 deaths; 67 cases of measles, with 6 deaths; 51 cases of whooping cough, with 18 deaths; 32 cases of scarlet fever, with 2 deaths; 9 cases of cerebrospinal meningitis, with 4 deaths; 17 cases of varicella and 1 case of smallpox; a total of 817 cases, with 236 deaths.

OHIO.

Personal.—Dr. Max Heidingsfeld, Cincinnati, has gone to Berne, Switzerland, to attend the meeting of the Dermatological Congress.——Dr. David P. Shie, Orrville, who is critically ill with hepatitis, is improving and believed to be on the way to recovery.

Free Antitoxin.—The State Board of Health has made an arrangement whereby it acts as a distributing agency to supply diphtheria antitoxin to local boards of health for use where it might otherwise be unavailable on account of poverty. The antitoxin is the property of the manufacturer and is to be paid for by the local boards of health as required.

Typhoid Fever at Cincinnati.—Drs. Martin Lewis and Dudley Palmer of the house staff of the City Hospital have gathered some interesting data regarding the epidemic of typhoid fever. Between April 1 and August 13, 230 cases of the disease were treated at the hospital. The cases were located between Liberty Street and Walnut Street east to the bottoms, and again on Central Avenue from the city hall to Liberty Street and south of McMicken Avenue and west of Eggleston. This territory receives its water supply from the Third Street reservoir. They find typhoid most prevalent among the Hungarians and other recent immigrants who have little or no knowledge of the laws of hygiene.

PENNSYLVANIA.

Operated On for Appendicitis.—Dr. Calvin H. Elliot, resident physician in the Insane Asylum at Harrisburg, has been operated on for appendicitis in the Medico-Chirurgical Hospital, Philadelphia.

Sanitarium Burned.—The main building of the Grand View Sanitarium, an institution for the treatment of consumptives near Oil City, was burned August 19. The loss is $5,000, partly covered by insurance. The patients, 196 in number, all escaped uninjured.

Dr. Mackey's Death.—In the notice of the death of Dr. Charles D. Mackey, Montrose, which appeared in THE JOURNAL of August 18, page 528, it was stated that he was a member of the Susquehanna County Medical Society from 1888 to 1901. The secretary of the society writes that this is incorrect, as at no time was Dr. Mackey a member of the society.

Hydrophobia Prevalent.—It is reported by Dr. Aime Leteve, who is in charge of the Magee Pathological Institute, Pittsburg, that there are a large number of cases of hydrophobia in Western Pennsylvania, Ohio, West Virginia and Maryland. As many as thirty cases have been under Professor Leteve's care at one time during the last two months, and at present there are sixteen under prophylactic treatment at the institute.

Food Commissioner Victorious.—A notable victory in the administration of the pure-food laws of the state has been achieved by Dr. B. H. Warren, dairy and food commissioner. The commissioner's chemists having discovered sulphur dioxid in much of the candy examined, charges were brought against the manufacturers and dealers. The manufacturers stated that the glucose containing this preparation (which was used for bleaching) was supplied solely by the glucose trust, a subsidiary of the Standard Oil Company. The commissioner had included the representatives of the trust among those against whom charges had been made, and the trust, seeing it was useless to fight the state law and the commissioner, asked for a conference. At this conference the trust's attorney admitted that the charges were true and promised to settle all fines against the manufacturers, and, moreover, to withdraw all bleached glucose from the markets of Pennsylvania and from the markets of the United States. In this manner the commissioner has drawn the attention of the entire country to the fact that harmful substances are universally used in the manufacture of glucose candy, and by the enforcement of the pure-food laws has eliminated for the future this danger to the public health.

Report of Food Commissioner.—Dr. B. H. Warren, state dairy and food commissioner, in his report for 1905 states that the milk supply of Philadelphia "has no superior, if equal, in any city in the United States." Many hundreds of samples of milk and cream were collected for examination, with most satisfactory results. The crusade in the interests of pure food has been expensive, but has been the means of saving many lives in other sections of the state as well as in Philadelphia. A smaller percentage of adulterated, preserved or impure articles of food and of milk in particular is sold. The number of prosecutions ordered during the year is much less than during the preceding years. The following summary of the total number of suits ordered by the commissioner shows the decrease in figures: In 1903, 1,800; 1904, 1,517, and 1905, 1,085, a total of 4,402. The report says:

> The decreasing figures form their own commentary. The continued violation of the oleomargarine law was productive of the next to the largest number of suits ordered in 1905, namely 187, while thirty defendants were charged with violating the renovated butter law. The sale of chemically preserved meat, sausage, etc., resulted in the ordering of over 200 prosecutions. Jellies, jams and preserves were found illegal in 144 cases, while Maraschino cherries produced

fifty-three unfavorable chemists' reports. Eighty-three samples of catsup were found to be illegal, while prosecutions were directed against fifty-two dealers who sold Worcestershire and other sauces containing forbidden chemicals. In strange contrast with previous reports, only forty-seven samples of milk and cream proved unlawful.

Philadelphia.

Public Baths.—The total number of bathers at the city bathhouses last week reached 605,066. Of this number, 131,156 were men, 4,757 women, 449,982 boys and 19,171 girls.

Bequests.—By the will of the late Ellen Summers $2,000 is to be divided equally among the West Philadelphia Branch of the Little Sisters of the Poor, St. John's Orphan Asylum for Homeless Boys and the House of the Good Shepherd.

Trachoma in Immigrants.—In fifty out of the 340 steerage passengers who arrived on the American Line steamer *Westernland*, August 20, traces of trachoma were found. It is expected that about one-fifth of this number will be deported.

New Officials for Health Bureau.—Director W. M. Late Coplin, of the Department of Public Health and Charities, has made the following appointments: Dr. Augustus H. Clagett, assistant medical inspector; John H. Lehman, nuisance inspector, and Thomas H. Nelson, milk inspector.

Personal.—Dr. Samuel W. Morton is slowly recovering from a severe attack of appendicitis.——Dr. Edward P. Davis sailed for Europe, August 23.——Dr. James P. Hutchinson, who has been spending the summer abroad, will return home the end of September.——Dr. J. C. McCracken, who went to China last December to help found a medical school and hospital in Canton under the auspices of the University of Pennsylvania, has returned to this country. He will assist in the dedication of the new University Settlement House in this city and will then deliver a series of lectures to raise funds for the Canton Medical School.

Health Report.—The total number of deaths for the week numbered 481, a decrease of 17 from those reported last week and an increase of 44 over the number reported in the corresponding week of last year. The principal causes of death were as follows: Typhoid fever, 12; whooping-cough, 17; scarlet fever, 3; diphtheria, 4; tuberculosis, 58; cancer, 22; apoplexy, 15; heart disease, 25; acute respiratory diseases, 24; diarrhea and enteritis, 90; appendicitis, 4; Bright's disease, 43; congenital debility, 18; senility, 4; suicide, 6; traumata, 8; accidents, 9, and marasmus, 9. There were 149 cases of contagious disease reported, with 19 deaths, as compared with 189 cases and 19 deaths reported for last week.

SOUTH DAKOTA.

Epidemic of Typhoid.—More than 100 persons are reported to be seriously ill with typhoid fever at Bristol, Andover and Webster, and five deaths are reported.

New Hospital at Yankton.—A number of Yankton businessmen held a meeting August 3, with Bishop O'Gorman at the Sacred Heart Hospital and reported progress on the new hospital project.——The Good Samaritan Association has been incorporated with a charter in perpetuity. Money for the erection of the hospital is to be secured through the issuance of 5 per cent. bonds, of which $50,000 worth are to be issued at once, redeemable in five, ten, fifteen and twenty years. In 1927 the hospital is to be turned over to the Benedictine Sisters.

TENNESSEE.

Health Crusade.—The Humboldt Medical Society has prepared a pamphlet on the laws of health which contains a series of articles on hygiene and sanitation for use in the city schools. A copy of this pamphlet is ordered to be placed in the book of every child attending school.

New Building for Academy.—The members of the Nashville Academy of Medicine at its meeting August 15, subscribed about $8,000 toward a new building to be used as a permanent home for the organization. About $20,000 is needed for this purpose.

Personal.—Dr. N. F. Raines, Memphis, has been appointed president of the Shelby County Board of Health.——Mr. Laurent Brown has been appointed lecturer of medical jurisprudence in the Medical Department of the University of Tennessee, Nashville.——Dr. George St. John, Knoxville, has been appointed physician at Bushey Mountain prison.——Dr. Henry J. Kelso, Knoxville, was thrown from his buggy August 4 and sustained a fracture of the leg below the knee.——Dr. Louis Leroy, Nashville, state bacteriologist, has accepted the chair of principles and practice of medicine in the College of Physicians and Surgeons, Memphis.

TEXAS.

Personal.—Dr. Nathaniel Cass, Cameron, who was operated on for appendicitis July 29, has recovered from the operation, but is now suffering from pneumonia.——Drs. Henry B. Decherd, William E. Howard, Scurry L. Terrell, Albert Wilkinson, Robert S. Yancey and John O. McReynolds, have been appointed medical inspectors of the Dallas Board of Education; Drs. Edwin J. Reeves, I. S. Kahn and George W. B. Swain have been appointed as an advisory board and Dr. Frank J. Hall has been appointed to act in conjunction with the advisory board.

District Society Meets.—At a meeting of the Central Texas District Medical Association, Dr. I. Newton Suttle, Corsicana, was elected chairman, and Dr. James W. Miller, Hillsboro, secretary of the section on surgery; Dr. Jesse B. Shelmire, Dallas, chairman, and J. Walter Torbett, Marlin, secretary of the section on practice of medicine; Dr. Leonard Keplinger, Waxahachie, chairman, and Dr. Burt L. Scott, Waco, secretary of the section on eye, ear, nose and throat and Dr. Oliver J. Halbert, Waco, chairman, and W. L. Crosthwait, Holland, secretary of the section on obstetrics and gynecology. Waco was selected as the next place of meeting.

VIRGINIA.

Punished for Selling Cocain.—James Hill, colored, Richmond, has been sentenced to serve a term of imprisonment of one year for selling cocain.

Personal.—Dr. Anna Moon Randolph, Newport News, is suffering from septicemia, resulting from an operation wound.——Dr. Ernest Woolfolk, Thornhill, is ill and is undergoing treatment at the Memorial Hospital, Richmond.

Election.—At the annual meeting of the Augusta County Medical Society held in Staunton, August 8, the following officers were elected: Dr. John W. Freed, Hermitage, president; Drs. J. C. Alexander, Mount Solon; Walter S. Whitmore, Mount Sidney, and William C. Roller, Mint Spring, vice-presidents; Dr. Thomas M. Parkins, Staunton, treasurer, and Dr. Marshall J. Payne, Staunton, secretary.

WASHINGTON.

Typhoid Fever Diminishing.—The health officer of North Yakima, in his report for July, says that less than 12 cases of typhoid fever have been reported to him since last April, whereas, during the month of July, 1905, 54 cases were on record; and he believes the city to be in excellent sanitary condition.

License Revoked.—An order of the State Board of Medical Examiners has been filed in the office of the County Clerk of King County revoking the license of James Stewart of Seattle for unprofessional and dishonorable conduct. Stewart was charged with having attempted to bribe a member of the board with $600 to procure a set of the questions to be propounded at the examination. He was convicted in July, 1902, and appealed to the Supreme Court, which a year later affirmed the decision of the lower court.

WEST VIRGINIA.

Personal.—Dr. John G. Pettit, Clay, has been elected assistant at the West Virginia Hospital for the Insane, Weston.——Dr. George W. Daniels, Gerrardstown, was nearly stung to death by a swarm of infuriated bees a short time ago. He is now out of danger.——Dr. Charles B. Williams, Philippi, is ill with typhoid fever.

Poison Regulations.—An ordinance recently enacted by the city council of Charleston provides that no person shall sell except to dealers any poisonous drug or substance except when prescribed by a physician or when the purchaser has first been furnished with a written permit from the board of health. The enforcement of this ordinance is being strenuously opposed, it is said, by the druggists, who claim that it prohibits the sale of disinfectants and fungicides and the common household liniments, and is in conflict with the state law. At a meet held July 7 they resented the report that their opposition to the measure was due to a desire to profit from the sale of narcotics.

GENERAL.

Electrotherapeutists To Meet.—The sixteenth annual meeting of the American Electrotherapeutic Association will be held at the College of Physicians, Philadelphia, Sept. 18-20, 1906. Transportation is to be on the certificate plan at the rate of a fare and a third. The headquarters will be at the Hotel

Flanders, Fifteenth and Walnut streets. Dr. G. Betton Massey, 903 Professional Building, Philadelphia, is chairman of the committee of arrangements.

Negro Medical Association.—The eighth annual meeting of the National Medical Association of Negro Physicians and Surgeons of the United States was held in Philadelphia August 21-23. The association has a membership of over 2,000, and more than 500 delegates were present. The following officers were elected: Dr. Nathan F. Mossell, Philadelphia, president; Dr. George W. Cabannis, Washington, vice-president; Dr. John A. Kenney, Tuskegee, Ala., secretary; Dr. A. Wilberforce Williams, Chicago, treasurer; and Dr. Peter A. Johnson, New York City, chairman of the executive committee. The next meeting will be held in Baltimore in August, 1907.

Southern Tri-State Society to Meet.—The eighteenth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held at Chattanooga, Tenn., Oct. 2-4, 1906. Reduced rates have been granted for Alabama, Georgia, Tennessee, Mississippi, Louisiana and Florida. The preliminary program includes an excellent list of papers from leading medical men of the south. As mentioned elsewhere, strong pressure will be brought to bear to convert this organization into a branch of the American Medical Association, the Association of the Southeastern States. Further information and places on the program may be obtained from the secretary, Dr. Raymond Wallace, Chattanooga, Tenn.

Health Report of the Isthmus for July.—In his report for July, Colonel Gorgas states that it is now eight months since a case of yellow fever occurred in Panama. During the month there were thirty-three cases of smallpox at Colon, with one death. The disease was introduced in the person of a child from Cartagena. With one or two exceptions the cases all came from one focus. The last case was reported July 29, and from that date till August 17 (the date of the report) no new cases had been discovered. Colonel Gorgas believes that the outbreak has been controlled and states that its prompt extinction was due to the energetic efforts of Dr. Wheeler, the health officer, and those who assisted him. The small death rate was due to the care given the sick by the superintendent of Colon Hospital and the officers under him. Among the 28,000 employés there were 151 deaths. Of these, 13 were among the 5,000 whites and 138 among the 23,000 blacks, giving the blacks more than double the death rate of the whites. Pneumonia caused the largest number of deaths; the next disease in point of mortality was malaria. In referring to the published reports that the death rate among the negroes is due to too much sanitation, Colonel Gorgas states that in his opinion this statement is erroneous. The obvious cause for the large death rate, he says, is seen in the very bad sanitation of their lives. They seldom possess a change of clothing, and when they reach home in the evening their clothes are soaked. They go to bed, sleep soundly, and as the air gets cold the men become thoroughly chilled. In general, the men feed themselves, and as they are improvident they do not give themselves nearly enough food. This, Colonel Gorgas believes, is sufficient to account for the prevalence of pneumonia among the negroes. The Canal Commission, he states, is endeavoring to remedy these faults, and when corrective measures have been put into effect the mortality from this cause will decrease.

CANADA.

Congress of French-Speaking Physicians of America.—The fourth congress of the French-speaking physicians of North America will be held at Quebec in June, 1908, on the occasion of the celebration of the three hundreth anniversary of the founding of Quebec by Samuel de Champlain in 1608. The congress will be presided over by Dr. A. Simard, with H. Hervieux as vice-president; Lanoix, vice-president for the United States, and Siroix, vice-president for the rural districts; A. Paquet, secretary general, and F. X. Dorion, one of the governors of the College of Physicians and Surgeons, the treasurer. The third congress recently closed its sessions at Trois-Rivières with an attendance of about 300, and more than 120 scientific communications on the program. Dr. Normand presided and Dr. C. Deblois proved an able secretary. A handsome medal was presented to the congress on behalf of the scientific societies of France, some of which were represented by special delegates. H. Triboulet was the official delegate of the French government and R. Proust of the University of France, while A. Loir represented a French scientific society. J. Ahern's communication on "Chorioepithelioma" is given in full in the *Bulletin Médical de Quebec* for July. He describes 3 cases. The patients were 19, 44 and 30 years old. Cough and blood spitting were prominent symptoms in these cases. All the patients had had from 2 to 12 pregnancies, some of them terminating in abortion or premature delivery. The third patient had passed through 5 pregnancies and one recent abortion at four months, and when first seen was coughing and spitting blood, with much icterus and much weakness and emaciation. The case was diagnosed as chorioepithelioma with metastases in vagina, liver and lungs, but no autopsy was allowed. No operation was attempted and the patient succumbed in ten days. There was no history of a preceding mole in this case, as in the 2 others. Laurendeau of Brandon reported a case in which he had performed "extramedian symphyseotomy," hebotomy or pubiotomy as the operation for enlarging the pelvis by lateral section of the pubis is variously denominated. It was the first operation of the kind done in Canada, and proved eminently successful.

FOREIGN.

New Hospital for Belfast.—The new fever hospital for Belfast was formally opened August 2. This is said to be one of the best designed and equipped of its kind in the world.

Proposed Restriction of Marriage in Roumania.—The *Deutsche med. Wochschr.* refers to a decree whose adoption is now being discussed in Roumania, to prohibit marriage to persons suffering from incurable syphilis, pulmonary phthisis or epilepsy.

Smallpox in Central America.—Acting Assistant-Surgeon Layton reports that smallpox exists in Bluefields. Passengers leaving for Mobile have been vaccinated. The local governor assured Dr. Layton that he would appoint a board of health to take full charge of the situation. The situation is a serious one and local conditions all favor the rapid spread of the disease.

Collective Research on Appendicitis in Europe.—The Paris Académie de Médecine and the Berlin Verein für innere Medecin have each been devoting several sessions to a discussion of questions regarding appendicitis. Statistics show that the number of cases and the mortality from appendicitis are increasing in continental Europe. The German imperial authorities have now appointed a committee to undertake a collective investigation on the subject. It consists of eight members, the majority members of the Berlin society mentioned above.

Eighth International Congress of Otology.—This congress was to have been held at Budapest in 1908, but it has been postponed one year. This has been done because the next international medical congress is to be held at Budapest in 1909, and it has been arranged that the congress of otology will convene as a special section for otology in the international medical congress. It will retain its autonomy, however, and be called the Eighth International Congress of Otology, as above. Prof. J. Böke of Budapest will preside, while Dr. S. Szenes is secretary general and Dr. E. Vali, treasurer.

International Tuberculosis Centralblatt.—Prof. L. Brauer of Marburg has been publishing for some time the *Beiträge z. Klinik d. Tuberkulose*, which is now in its fifth volume. He has recently commenced the publication of what he calls the *Internationales Centralblatt f. d. gesamte Tuberkulose-Literatur*. Both of the periodicals are issued by A. Stuber's Verlag, Würzburg. The *Beiträge* appear irregularly, from 3 to 5 numbers forming a volume, the price of which is 16 marks, or about $4. The *Centralblatt* is issued monthly, and the annual subscription is 8 marks, $2. O. de la Camp and G. Schröder are also interested in the publication, while the *Beiträge* has a long list of collaborators, including Schwalbe, Völker and Vulpius.

Responsibility of Hospital for Suicide of Patient.—A hospital maintained by the sisters of charity at Berlin has recently been sued for damages by the relatives of a man who jumped out of a window while delirious in pneumonia. The plaintiff stated that she had sent her husband to the hospital so that he could have better supervision than at home, but he had been left alone and he seized the opportunity to commit suicide. She claimed that the suicide could not have occurred if he had been properly watched. The hospital authorities said that close supervision all the time was impossible for the limited nursing force of the hospital, and that they had no funds to increase the nursing force. The judge held the nurse in charge of the case at the time responsible for the man's death and imposed the fine asked. It was a charity case.

The Professorship of Physiology at Glasgow University.—King Edward has appointed Dr. Diarmid Noel Paton regius professor of physiology at Glasgow University to succeed Dr. J. G. McKendrick. Dr. Paton is the son of the late Sir J. Noel

Paton, the well-known artist. *The Medical Press* states that Dr. Paton has been engaged for many years in teaching physiology in the extramural school in Edinburgh, while his position as superintendent of the laboratory of the Royal College of Physicians has proved his capacity both for carrying out original research and for inciting others to do the same. He is well-known as a distinguished physiologist, especially through his studies in dietetics and on the functions of the ductless glands; while he has also published a number of valuable researches in connection with the life-history of the salmon. Dr. Paton has been a most popular teacher in Edinburgh, the *Press* continues, and his influence for good and public spiritedness have made themselves felt in all matters connected with medical education. His training, though in the main physiologic, has brought him so much in contact with clinicians that in teaching he always emphasized the practical rather than the purely scientific aspect of physiology; he has never forgotten, as some physiologists are apt to do, that his pupils are going to be physicians, not physiologists.

Health of India.—Acting Assistant-Surgeon Eakins in *Public Health Reports*, states that the mortality in India from cholera is the highest recorded since 1901. The deaths from this disease number 146,339, giving a ratio of 2.93 per mille, against 1.63 in 1904, and 2.77, the quinquennial average. The mortality from plague in 1905 was the highest on record since the outbreak in 1898, the total number of deaths being 126,084, against 75,433 in the previous year, and 58,255, the average of the last quinquennium. The period of greatest prevalence was, as usual, from January to April, but the climax was reached in March, in which month alone 40,090 deaths from plague were reported. Twenty-seven districts were more or less affected by the disease, the districts which suffered most being Saran, Patna, Gya, Shahabad, Monghyr, and Calcutta. During the year rat extermination was carried on in many parts of the province, but notably in the Giridih coal fields and in Bihar. As an example of the efficacy of rat extermination the sanitary commissioner cites the instance of Jagadispur in the Shahabad district. The operations were carried on there very thoroughly, and though there was a good deal of the disease in Shahabad, Jagadispur itself enjoyed complete immunity despite the fact that a very large number of the people from other badly infected localities came to reside there. The arrangements to keep up the campaign for at least another twelve months are complete, and if, as is not impossible, a virulent and widespread epidemic occurs next winter, the places where rat extermination has been carried on will have an opportunity of demonstrating conclusively the practical results of this method of protection. During the year, 1,544 plague inoculations were performed. A total of 1,214,487 deaths was reported from "fever," the death rate from this cause representing a ratio of 24.34 against 20.49 per mille, in the preceding year, and accounting for 63.17 per cent. of the total deaths registered from different causes during 1905. Antimalarial measures, which, aimed at the destruction of mosquitoes, were tried at Berhampore and Balasore, and though it can not be claimed that they have as yet yielded great results, they caused a considerable reduction in the number of mosquitoes and paved the way for more complete operations. Considerable activity was displayed by many municipalities in the administration of the various branches of sanitation. Inquiries were made during the year to ascertain whether filtration through sand and application of sulphate of copper rendered the effluent from septic tank installations bacteriologically pure. The net result of the experiments was to show that these methods, either separately or in combination, are capable of purifying the effluent, but that in practice they are likely to prove difficult in proportion to the amount of impurity in the material to be treated; and it was considered doubtful whether they would be practicable in the case of effluents of a high degree of impurity except as adjuncts to other methods of treatment. Sterilization of the effluent was then attempted by means of chlorinated lime. The experiment proved successful, and it was found that an addition of this material equivalent to 5 grains for each gallon of effluent rendered the fluid virtually sterile. The sanitary commissioner reports that septic-tank latrines are an entire success when used for communities such as mills, large schools, railway workshops, and the like, and he is now considering whether or not they can be adapted to municipal towns. He will be asked to submit a report embodying the results of his experiments. The sanitary commissioner has also made a number of suggestions for the adoption in municipalities of the septic-tank method as a

Pharmacology

Somnos.

Under the caption "The Chemistry of Chloræthanal"* the following has appeared in some of the drug journals for August:

An abstract of papers from *The Journal of the Illinois Medical Society* for February 14, 1906, seems to be going the rounds of the pharmaceutical and medical press. It contains among other papers one by Prof. Julius Stieglitz, Ph.D., entitled "The Problem of the Synthetic Chemical Compound," read at the "Symposium on Proprietaries" of the Illinois Medical Society. In reference to one of the products of our house the author says: "It bears in its description the statement that it is a compound of chloræthanal with a higher polyatomic alcohol, which is true. To a chemist, that spells at once chloral combined with glycerin. What physician who would hesitate about prescribing chloral would not like to use his own judgment as to whether chloral *plus* glycerin would be any safer?"

To use his own judgment on such a subject intelligently, a physician should know the nature of the compound formed by adding chloral to glycerin, just as he would in deciding in regard to prescribing a product formed by combining potash with bromine. If not informed regarding the chemistry of the latter subject he might think that potash and bromine, both being dangerous poisons, would be only the more poisonous when combined. The physician posted on the subject would, however, recognize the compound as potassium bromide. In a similar manner, a physician not knowing that the product resulting from the reaction between equivalent amounts of chloral and glycerin is a definite chemical compound, differing chemically, physiologically and clinically from chloral, might hesitate about prescribing it because of fear that it was chloral dissolved in glycerin.

Inasmuch as the statement referred to gives an entirely erroneous idea and implies that the preparation is simply a solution or mechanical mixture of chloral and glycerin, we submit the following:

The reaction which occurs when chloræthanal—trichloraldehyde or chloral—and a higher polyatomic alcohol—the trihydric alcohol $C_3H_5(OH)_3$—or glycerin, are added together, in proper equivalent proportions, produces the chemical compound, trichlorethidene propenyl ether. This reaction was studied and reported by Louis Henry, a celebrated chemist of Louvain, Belgium, as long ago as 1874 (see *Berichte der Deutschen chemischen Gesellschaft*, VII (1874, p. 762). The result of the reaction is a definite chemical compound (trichlorethidene propenyl ether), which, when heated somewhat above 40 degrees C. (104 degrees F.) decomposes into its original components, chloral and glycerin.

The heat developed on admixture of these two substances, the physical properties of the resultant product, and the physiological effects, all prove that the product is a new compound differing in marked degree from chloral. The symbolic formula for this new compound is $C_{10}H_{13}O_4Cl_3$.

Trichlorethidene propenyl ether is a hypnotic belonging to the methane group. It consists of a viscid mass, or solidified jelly, which will not flow on inverting the container. It can be softened and made to liquefy by heating, or can be changed to a brittle solid on chilling by a freezing mixture, thus differing in its physical condition from either of its original components by being more solid than either. This proves the formation of a chemical compound as distinguished from a mere mixture, which would have the tendency to lower the freezing point instead of raising it, as here effected.

What has caused chemists who have made a superficial examination to reach the wrong conclusion that no definite compound is formed has been the fact that when overheated this trichlorethidene propenyl ether is again reverted into chloral and glycerin.

Our elixir (Somnos) contains in each 16 Cc. 1.2 Gm. of a concentrated (72 per cent.) trichlorethidene propenyl ether solution in glycerin. When 16 Cc. of this elixir is injected into the veins of a dog, or other animal, the immediate effect is no greater than the effect of injecting the same amount of normal salt solution in the same way; and not until total doses corresponding to twenty times that prescribed are injected does the blood pressure show any permanent fall, or decrease in respiration, and these phenomena are no greater than are characteristic of normal sleep.

Enormous doses are required to produce a lethal effect on animals, corresponding to at least 15 fluidounces of the elixir injected into the veins of a 150-pound man. Sixteen fluidounces of the elixir has been taken by mouth with suicidal intent, and nothing resulted except a long-continued normal sleep, from which the patient awakened refreshed.

The action of trichlorethidene on the blood is practically negative. This is in great contrast to chloral, which reduces the red blood cells on an average of 32 per cent. It does not reduce hematin, as it was impossible to find hæmatoporphyrinuria in a single case of the many in which it was tested; neither have we had any reports of it doing so.

We are claiming that the product is safer than any known hypnotic; that it produces normal sleep, is less depressing than the bromides and absolutely without any untoward effect upon the heart,

* Chloral is a trichlorin derivative of the aldehyde derived from ethyl (ethyl) alcohol and therefore is called trichlorethanal, that is trichlor, indicating that the compound contains three atoms of chlorin, ethan referring to its derivation from ethane or ethyl alcohol and the ending al denoting that it is an aldehyde. Compounds containing one and two chlorin atoms, monochlorethanal and dichlorethanal, are known, but since the compound containing three chlorin atoms is the only one in common use the term chlorethanal is applied to chloral, the prefix tri being understood. The title, therefore, reads in plain language: "The Chemistry of Chloral."—Editor JOURNAL A. M. A.

respiration and vasomotor centers or the blood. In this we are amply justified by the results of physiological test and clinical experience.

Therefore, in answer to Professor Stieglitz' question. What physician who would hesitate about prescribing chloral would not like to use his own judgment as to whether chloral *plus* glycerin would be any safer? we unhesitatingly reply: Chloral is conceded to be the most desirable hypnotic known, but owing to its untoward action is unsafe. Trichlorethidene propenyl ether, as prepared by us in the form of elixir (Somnos), possesses all the desirable properties of chloral, but so far as known is free from its untoward effects. Physicians who know this to be the case (and a large and increasing number do know it) prescribe the product in preference to any other hypnotic, and their use of it is founded upon judgment and discretion.

Honest criticism never hurts, but facts half stated, or at least so stated as to lead to erroneous criticism, are unfair, and for that reason we have given the above full information. Very truly yours, H. K. MULFORD COMPANY.

The quotation which calls forth the above letter is from a paper read by Professor Stieglitz in the symposium on "Nostrums," before the Chicago Medical Society—not the Illinois State Medical Society as stated—and published in THE JOURNAL of the American Medical Association, May 5, 1906.

The evident intent of Prof. Stieglitz' paper was to show by a concrete example, without mentioning specifically the name of the article, how the glamor of the production of a synthetic had led a prominent and reputable firm to mystify the profession by the use of chemical terms, unintelligible to the mass of the profession, in describing a simple combination of well-known drugs.

Somnos is a proprietary preparation put out by the H. K. Mulford Company, as a:

"Definite chemical product formed by the synthesis of chlor æthanal with a polyatomic alcohol radical."

On the label Somnos is stated to be

"A reliable and safe hypnotic and cerebral sedative, free from depressing effects upon the heart, respiration, vasomotor centers."

In the advertisements we are told that:

"Somnos contains no chloral nor paraldehyd and is absolutely free from any depressing action upon the heart or circulation, and has no destructive influences on the red corpuscles of the blood, nor does it cause gastric disturbances by continued use."

It may possibly be unnecessary to suggest that, stripped of of all technical verbiage the H. K. Mulford Company acknowledges that Somnos is an unstable compound of chloral and glycerin, and so unstable that it separates and becomes a simple mixture at 104 F. To put it in different words, the firm states that Somnos is a compound of chloral and glycerin and not a mixture, since a chemical union takes place between the two drugs. By referring in the above letter to the work of Henry, the H. K. Mulford Company acknowledges, unintentionally, probably, that this idea of uniting chloral with glycerin is not original with that company. In parentheses it may be said that many attempts have been made in the past to produce compounds of chloral which would not depress the heart; these have all been failures. As Fraenkel states ("Arzneimittel Synthese," second edition, p. 444) compounds of this sort are either so permanent that the chloral effects are lost altogether, or else the chloral is so readily set free that the compound possesses no advantage over the drug. As stated below, experiments show that this is true with the Mulford preparation.

Heretofore the literature did not contain a word to indicate whether Somnos was "chloræthanal alcoholate" or a solution or an elixir of it. As a matter of fact it appears to be an elixir containing between 5 and 6 per cent. of the unstable compound of chloral and glycerin. And yet physicians were asked to compare the toxicity of this solution with the undiluted chloral. Even now the attempt to mystify is persisted in. If it really was the intention of the H. K. Mulford Company to tell just what Somnos is, then the amount of chloral represented by a given amount of Somnos would have been stated and not: "Our elixir (Somnos) contains in each 16 Cc. 1.2 Gm. of a concentrated (73 per cent.) trichlorethidene propenyl ether solution in glycerin." We do not hesitate to say that there is not a physician, unless he is also an expert chemist, who could calculate from the data given the amount of chloral represented by a dose of Somnos.

Nearly a year ago, the Council on Pharmacy and Chemistry took up this preparation, Somnos, and chemical examinations revealed that it was a combination of glycerin and chloral, probably a non-stable chemical compound easily separating by heat. Correspondence regarding the matter took place between the Council and the H. K. Mulford Company, without any satisfactory conclusions being reached. The sub-committee having become satisfied regarding the composition of Somnos, namely that it is an unstable compound of chloral and glycerin, proceeded to an investigation by animal experimentation of the claims made by the H. K. Mulford Company regarding its therapeutic effects and safety. While the report has not yet been submitted to the Council, we are informed by those who have conducted the experiments that the results of the experiments show conclusively that the physiologic effects of Somnos are practically identical with those of an elixir of chloral of corresponding chloral strength; respiration, circulation and temperature were equally depressed by the two.

It is to be regretted that when the H. K. Mulford Company introduced this preparation the firm did not state what it now has been forced to state. It is more to be regretted, however, that the facts are not now presented in plain language easily understood and not in terms unintelligible except to chemists. Further, why did not the H. K. Mulford Company state exactly how much chloral is represented in a dose of Somnos as marketed, and leave it to those who use it to say whether the same quantity of chloral in Somnos has any different effect than has the same quantity of chloral in a simple elixir?

An Endorsement of the Council on Pharmacy and Chemistry.

At the recent meeting the Pharmaceutical Association of the State of Pennsylvania placed itself on record as endorsing the efforts of the Council on Pharmacy and Chemistry of the American Medical Association. In commenting editorially on this fact, the *Druggists Circular and Chemical Gazette* says:

Some of the druggists have not been able yet to see the "ultimate gain" to their profession to grow out of the putting down of fraud and deceit in medicine, but light is dawning on more and more of them all the time. The question will be settled when it is settled right—which it will be one of these days. Both in and out of medical circles the insolence of strongly intrenched but unworthy interests is giving way to fear, which in turn will be followed by dismay. Those who read the papers need not be told what is going on among the insurance companies, railroad corporations, the beef packers, and the "bad" trusts generally, and the same kind of revulsion has been stirred up against the evils of the proprietary medicine men. The latter, aided by the "red-clause" portion of the press and such other influences as it can control or buy off, are making a desperate fight, but as the public becomes better and better informed, the fraudulent nostrum army must continue its retreat.

Bile Beans.

In THE JOURNAL, Nov. 25, 1905, page 1676, we referred at some length to this nostrum and to the judgment given against it in a British court. A sequel to this appears in the *British Medical Journal*, July 28, from which we quote:

The second division of the court of session (four judges) at Edinburgh gave judgment on Friday, July 20, in an appeal against a judgment in the outer house, in which the Bile Bean Manufacturing Company, Limited, Greek street, Leeds, sought to interdict an Edinburgh chemist from selling under the name of "Bile Beans" any pills or other articles not made or supplied by the complainers. Interdict was refused in the outer house and the second division adhered to this judgment. The lord-justice-clerk said the bile beans of the complainers were said to be made of Australian vegetable substances discovered by a Charles Forde. The place of the discovery, the mode of it, and the instrument of it were all deliberate inventions, without any foundation in fact. The story was that Charles Forde, who was described as a skilled scientist, had noted the fact that the natives of Australia were free from bodily ailments, and that after research and investigation he had ascertained that that immunity was obtained by the vegetable substances. All that, in every particular, was false. There was never such a person as Charles Forde, and there was no eminent scientist engaged in such research in Australia. The truth was that the complainers had formed a scheme to palm off on the

public a medicine obtained from America, and they created a demand by flooding the country with advertisements, placards, pamphlets, and imaginary pictures. The complainers desired protection for the name "Bile Beans," but being themselves engaged in perpetrating a fraud on the public, they were not entitled to any such protection.

An Instance of the "Patent-Medicine" Habit.

Dr. J. C. Davis, Rochester, N. Y., reports the following interesting case of "patent-medicine" addiction:

"Mrs. Lottie Shaal died, July 10, from an overdose of 'a narcotic of some kind.' The coroner waived an autopsy as the woman was addicted to the 'patent-medicine' habit.

"During the past year she had been taking Cox's Headache Powders, obtained from her grocer. On July 7 she took one box of Cox's Headache Powders; on July 8 a part of a bottle of Hostetter's Bitters, and all of one bottle of Lydia Pinkham's Compound; on the morning of July 9 she went to see a neighboring physician, who gave her a small powder to quiet her nerves. I was unable to ascertain its contents. About noon she went out again and must have got advice or medicine, for she returned home and went to bed. Her two daughters noticed her peculiar actions, and in trying to undress her, discovered a small vial in her stocking. Mrs. Shaal pleaded with them not to disturb her—that she would not take any more. They let her alone for a short time and she got up and must have taken the contents, and have thrown away the bottle, for they have been unable to find it anywhere about the house.

"About 4 o'clock she was taken to St. Mary's Hospital with symptoms of some narcotic and spinal stimulant, and died the next morning, July 10."

Correspondence

Ethyl Chlorid As a Genera. Anesthetic in Minor Operations.

NEW YORK, Aug. 22, 1906.

To the Editor:—I noticed an article with the above title in THE JOURNAL, August 18, by George F. Hawley, M.D. I desire to call attention to the fact that the inhaler referred to was devised by me for ethyl chlorid narcosis, and has been used by the medical and dental professions for at least three years. He appends the name of "Apperson" to the inhaler, when it is and should be called the antidolorin inhaler, devised by Maurice Green, D.D.S.

No doubt Dr. Hawley has been misinformed or misled, and in proof of my statement I enclose reprints of several articles I have written in the past on this subject, in which are cuts identical to the one used by him.

I do not look for any special credit as the inventor of this device, but I do object to any one taking undeserved credit, or probably imposing on the profession by attaching his name to any apparatus or instrument wrongfully.

MAURICE GREEN, D.D.S.

We submitted the above letter to Dr. Hawley, who writes:

CHICAGO, Aug. 27, 1906.

To the Editor:—The mask mentioned in my article was represented to me as "Apperson's Mask." Having no reason to question the statement and not being acquainted with the mask of Dr. Green, I used this name in my article. I do not wish to place credit where it is not due, however, and I am, therefore, obliged to Dr. Green for setting me right in the matter. GEORGE F. HAWLEY.

Interstate Reciprocity and Frauds in Medical Schools.

SAN FRANCISCO, Aug. 23, 1906.

To the Editor:—In the discussion of the perplexing problem of interstate reciprocity one important phase of the question has apparently been totally overlooked: the necessity of the coöperation of examining boards in the investigation of medical colleges. Forgetful of the fact that the origin of examining boards is directly traceable to the fraudulent acts of medical colleges, boards authorized by law to go behind diplomas are notoriously prone to accept diplomas as *prima facie* evidence of regular and complete college work.

Thus the crudite secretary of the Michigan board writes that in all his career he has never had occasion to reject a diploma from a recognized medical school. Thorough investigation of credentials entails no small amount of labor, but it has already demonstrated that colleges violate the rules contained in their own published announcements and graduate students in violation of the state laws. Repeated rejections of diplomas secured under fradulent conditions has not cured the evil, at least in California, for similar frauds are recurring. The possessors of such diplomas, nevertheless, are beginning to seek new fields. They apply for examination or registration in other states, where their credentials are often accepted without question. Now, were California to reciprocate with these states it would, *volens non volens*, open the door to all such medical bandits, thus defeating the purpose of the law. Surely reciprocity under these conditions can not be founded on justice.

As a specific example of the detection of fraud in applications for license, we cite the following, taken from the official records of the California board:

May 17, 1906, H. R. Painton graduated from the Medical Department of the College of Physicians and Surgeons, San Francisco, and was given a diploma duly signed by Dr. Winslow Anderson, president, and Dr. D. A. Hodghead, dean of said college. July 31, in the office of the State Board of Medical Examiners, H. R. Painton filed his application for a license. In his affidavit mention is made of four consecutive annual courses at the above mentioned school, 1902 to 1906. Inspection of the annual announcements of the College of Physicians and Surgeons showed H. R. Painton's name in four different numbers, thus corroborating the applicant's sworn statement.

Further research, however, developed the following facts: H. R. Painton taught in the grammar school of a neighboring county from 1902 to 1904, i. e., his term of service in the capacity of teacher coincided exactly with the first two years of his alleged attendance at the College of Physicians and Surgeons, San Francisco. Confronted with the above evidence, H. R. Painton admitted having filed a false document, and gave his college attendance as only two courses. The value of H. R. Painton's faculty-bedecked diploma is *nil* in California, but past experience authorizes me to assert its par value in any other state. There, the fradulent product of the no less culpable College of Physicians and Surgeons, San Francisco, will undoubtedly become a stanch advocate of interstate reciprocity.

It may be asked why California recognizes schools proved guilty of fradulent acts. The answer is found in its medical law which authorizes the board to pass on applications and not on colleges.

Two remedies suggested themselves in dealing with frauds in medical colleges: 1. The investigation of colleges by national societies, such as the Association of American Medical Colleges, whose standard has already been recognized by the legislature of seven states and territories, or the medical council of the American Medical Association, whose functions are merely advisory. 2. The coöperation of examining boards in investigating the preliminary educational credentials and the college work of all applicants for license.

In conformity with the latter suggestion the credential committee of the California board has requested that it be notified of all applications for license filed with other state boards by graduates of California colleges. DUDLEY TAIT.

Insurance Examination Fees.

NEW YORK, Aug. 16, 1906.

To the Editor:—In THE JOURNAL, August 11, appears an editorial in regard to life insurance fees which is evidently intended to be a fair and conservative statement of the case from your point of view. While conceding the fairness of spirit manifested in the general tenor of your remarks, I can not refrain from calling your attention to the misleading inferences which may be drawn from your statement regarding the effect of the general insurance bill recently enacted by the New York State Legislature.

Any physician not familiar with the facts would be more than likely to infer from your remarks that this law does not in any way affect business written outside of New York State. I presume it was far from your intention to convey such an implication, as you are doubtless aware of the following facts:

1. The companies organized and operating under the laws of New York State must comply with the law limiting the expense of procuring new business. These limitations apply to the entire business of the company, whether written in New York, Oregon, or Central Asia.

2. The companies organized and operating under the laws of other states will not be permitted to enter and to do business in New York State except under limitations identical with those imposed on the New York companies.

The American Medical Association, in appointing a committee to investigate the life insurance situation in advance of passing final judgment on the matter, acted with characteristic dignity and restraint. As your admirable journal is the organ and mouthpiece of the Association, and has assumed the responsibility of molding the opinions of the medical profession on these questions, I am sure you will desire to correct a misleading editorial allusion to a matter of such pivotal importance as the New York insurance law.

EUGENE L. FISK, M.D.
Medical Director.

[Our correspondent evidently labors under the apprehension that our readers do not know that the New York law affects all companies that operate in New York, whether New York companies or not, and we hardly thought it necessary to emphasize this point. There are insurance companies—and many of them—which are still paying the old flat rate of $5.00, and which are doing business in New York.—Ed.]

District Branches of the American Medical Association.

NASHVILLE, TENN., Aug. 14, 1906.

To the Editor:—Since I learned of the intention on the part of the profession of Kansas, Missouri, Oklahoma, Arkansas and Texas to organize the Southwestern District Branch of the American Medical Association, I have been waiting to see if some one else would not give expression to the opinion that such organizations should be effected immediately all over the United States. Two weeks ago I introduced the discussion of this matter at the meeting of the Nashville Academy of Medicine, and found that every member present viewed the matter as I do. They emphasized their desire for such an organization in our territory by the creation of a committee, consisting of Dr. A. B. Cooke of this city and the undersigned, to undertake the work at once. We have called a meeting for this purpose to be held in Chattanooga October 2, at 9 a. m., in the Read House. This meeting is called for the same time as the meeting of the Tri-State Medical Association. It is my opinion that the Tri-State Association will be glad to transform itself at once into the larger body, which would be named either the Southern District Branch of the A. M. A., or the Southeastern District Branch, probably the former. The states expected to send representatives to this meeting are Kentucky, Tennessee, Georgia, Alabama, Florida, Mississippi and Louisiana. It is not improbable that Kentucky will wish to join the states immediately north of her, in preference to becoming a member of the Southern District Branch. The truth underlying the necessity for these district branches is very clearly expressed in the communication of Dr. F. H. Clark in the August 4 issue of THE JOURNAL as follows: "Because of the natural limitations of the state association on the one hand, and the magnitude of the American Medical Association on the other." It must be a fact recognized by every one that the sections of the A. M. A. have grown to be so large that the opportunity for presenting papers, and even of discussing papers, has become very small, especially as concerns the younger members of the profession. If for no other reason, the district branches should be brought into existence, but of course the meetings of these district branches should be held, as provided for already in the constitution, in the fall of the year, or in the early winter, so as never to interfere in the least with the annual sessions of the A. M. A.

In this communication I do not propose to do the thinking for the profession in the various states of the union, but I do propose to make some suggestions that will put them to thinking.

1. The following states are already combined in the formation of the Southwestern District Branch, namely, Kansas, Missouri, Arkansas, Oklahoma and Texas.

2. The following states will constitute, in the near future, the Southern District Branch of the A. M. A., namely, Tennessee, Georgia, Alabama, Florida, Mississippi, Louisiana, and probably Kentucky.

3. Would it not be well for the following states to organize the Southeastern District Branch, namely, South Carolina, North Carolina, Virginia, District of Columbia, Maryland, Delaware and Pennsylvania?

4. How would this do for the Eastern District Branch: New Jersey, New York, Rhode Island, Connecticut, Vermont, New Hampshire, Maine and Massachusetts?

5. How would this do for the Northern District Branch: West Virginia, Ohio, Indiana, Illinois, Michigan—and Kentucky, should she prefer this union to the other mentioned above?

6. How would this do for the Northwest Central District Branch: Wisconsin, Minnesota, Iowa, Nebraska, North Dakota and South Dakota?

7. This for the Northwestern District Branch: Montana, Wyoming, Idaho, Washington and Oregon?

8. This for the Western District Branch: Colorado, New Mexico, Arizona, Utah, Nevada and California?

These several districts would be sufficiently large for furnishing a body of medical men that could be divided into sections for scientific work, but the sections of course should not be so numerous as those of the A. M. A. I would suggest that the following sections would be sufficiently numerous: First, Section on Practice of Medicine, Obstetrics and Diseases of Children, allowing that the practice of medicine should include nervous, mental and cutaneous diseases; second, Section on Surgery and Gynecology; third, Section on Ophthalmology, Otology and Laryngology; fourth, Section on Anatomy, Physiology and Pathology. Therapeutics would naturally fall in the first section.

I trust that if this communication does nothing more, it will at least put the profession to thinking in the direction pointed out. It is presented only in the spirit of suggestion, and not of dictation.

G. C. SAVAGE.

The Attacks on the American Medical Association.

DETROIT, Aug. 1, 1906.

To the Editor:—In traveling I meet many members of our Association and hear a good deal of criticism of the management, which pains me very much, and obliges me to defend the organization, and where there is so much talk there must be some cause for it. I also read in the journals a good deal of criticism, and can readily see how it is caused. Undoubtedly a great deal comes from the manufacturers who are financially injured by being exposed; the other comes from the independent journals who resent the statement that there is no use for their existence. In the case of the manufacturers, few will defend them, and I think everybody believes that the good work should go on and be amplified if necessary. As far as the independent journals are concerned, I certainly think there is a place for them. First, there is a place for the various special journals, then there is a place for local medical journals; in fact, I believe every journal, no matter how small, has some good in it and reaches some physician and helps him, and thus does good. Their value may be limited, but still every one does some good. Some think there are too many medical societies; still I believe not. Each one reaches some members that others do not, and thus raises these members up.

The whole thing, it seems to me, is a lack of tact on the part of those in charge of the organization. Take for instance, the Report of the Board of Trustees, as it is published in THE JOURNAL of June 16, which is all right, being read

simply in abstract, but there is no reason why it should not be printed more in detail. A few pages more of printing matter costs very little more. For instance, the salary list. Why should it not be given in detail; why not state that the Secretary gets $10,000 a year? He certainly earns it. I think he earns twice as much. The members might just as well know it. Why should they not? The expenses of the organizer should be given in detail. He certainly earns it; in fact, the services he renders to the Association is worth five times as much.

I can readily see how the resolution to appoint a committee to investigate the financial condition was opposed by the Trustees, who thought it was a reflection on the management. They have the books investigated by an expert once or twice a year, and always select a different man. They know the books are all right, but the trouble is that the members do not know that. If they would, such a resolution would probably not be offered. If I were a Trustee I would not give any member a chance to offer such a resolution. I would offer it myself and I would insist that the greatest kickers should be put on that committee. That would cure them and then they would see that everything was all right, of which no member really has a doubt. Still, when such a resolution is objected to, it makes a man suspicious, and they ask why should anybody object to that? The Good Book says you must not only avoid evil, but the very appearance of evil. This a good doctrine.

It is just so with the new medical directory. Why could it not be stated exactly what was paid for the list bought by the Association and all the details? Speaking of the medical directory, that will cost probably $75,000 to get it up. With money received from a limited number of advertisements, the price ought to be reduced to about $2.00, and then every member of the Association will get one. At the most it should not cost more than $3.00.

It is such a simple thing. If all these things were known by the members there would be less criticism. The other point is the finances. The Association is growing, has a big income. We do not need to accumulate money. Why, for instance, should not every person who writes an article receive, say, 100 reprints free of charge as a good many medical journals do? If a man wants more he can pay for them and they ought to be given to him at the lowest possible figure or cost price. Why should the bound volume of the Sections cost $1.00 to the members, when the original cost is only about one-third? Why should we accumulate money in bonds and stocks? It is good to have a property of our own, the finest press, and facilities to turn out a good journal, but let us stop there. We may say we want a new building and a larger one. If we do need one, we can put up one, but do it in such a way, that from rents there will be enough to pay the interest on the building and to accumulate a sinking fund that will pay for it in twenty-five or fifty years. Why should the present members pay all that and leave the future generation a valuable property without any efforts of their own? We should be willing to do our share, but we do not need to do everything.

In fact, as the membership grows and the subscription list increases we ought to try and reduce the number of advertisements. We ought to have a journal with virtually no advertisements, and those we have should be charged a good price (just as they have been in the past); decrease the number and increase the price.

If I should be mistaken about one or the other little point, I hope the Trustees will correct me, but all around I simply want to say: Be more open and specific in your statements. Do not resent every little inquiry made, but just jolly them along. Let the independent medical journals alone. Do not charge members more than the actual cost for whatever they get. Devote more money to the chemical and research laboratory, and to establishing of a complete medical library, and give a most perfect review of every medical journal published in the world. That seems to me, should be our constant endeavor. Do not let us quarrel about such little things, but stick together for the good of the race.

J. H. CARSTENS.

The above letter was forwarded to Dr. T. J. Happel who sends the following reply:

TRENTON, TENN., Aug. 8, 1906.

To the Editor:—Nothing is more unpleasant to me than a controversy, for life is too short to quarrel over the little things. I have read Dr. Carstens' letter, and I regret that he has felt called on to notice the criticisms made by others in regard to the management of the affairs of the Association; yet to notice them in such a way that did one not know that he was a friend of the Association and ready at all times to uphold it, he would be considered as one of the elect who was sitting in judgment on these questions. These criticisms seem to be confined to certain localities where there are perhaps medical men who feel that they are better qualified to edit THE JOURNAL and to manage the affairs of the Association than is now being done. In various ways I come in contact with many physicians, and I have yet to find the first one, except the few disgruntled ones who were at the Boston session, who complain of the management. The criticisms on the part of the various physicians spoken of in almost every case could be referred to "a sore toe," or some other like cause of irritation.

The independent medical journals owned by physicians are usually run for profit alone, and of course the war made on unethical advertising hurts their "toe." They claim not to want to publish unethical advertisements, and yet they continue to do so for the money which they receive, and their opposition is due to the fact that THE JOURNAL has shown up the fraudulent nature of these advertisements. If they cut out these advertisements they lose money, hence they complain, but they make their journal better. There is a place for all ethically conducted private journals, and instead of THE JOURNAL, A. M. A., injuring them, it is an indirect benefit to them, for as THE JOURNAL'S rate of advertising is proportioned to its circulation, the private journal will get much that THE JOURNAL can not get. Some of these journals are doing noble work, and the House of Delegates was outspoken on this subject at Boston.

While the journals already mentioned are to be commended, there are many journals sent out by and in the interest of the manufacturing chemists to laud their own products. Such as these can not be handled decently in an article limited in space, and hence, they must be ignored.

The state journals are rapidly becoming essentials in well organized medical associations. They furnish state and county medical news—reporting the proceedings of the state and county medical societies. Of course this might lessen the amount of free material for the private journals, but the private journal has no right to complain of this.

Manufacturers of some of the proprietary medicines complain because the worthlessness of many of their products has been shown up through the work of the Council on Pharmacy and Chemistry of the A. M. A. I agree with the Rev. Sam Jones in cases of such complaints, when he says that "if you throw a brick into a crowd you can tell who has been hit, because he always makes an outcry." Those who are complaining most loudly are the ones who have put on the market the worst drugs, and who may have come in contact with the "Pure Food Bill" passed by the last Congress.

However, I would have nothing to say in answer to Dr. Carstens' letter had it not been for the insinuations against the Board of Trustees. He says that there is a lack of tact on their part in the management of the affairs of the Association, and illustrates this by a reference to the report of the Board of Trustees, which he says was read "simply in abstract" (of course he means in the House of Delegates). Dr. Carstens knows, or should know, and if he was not in the House at the time the report was called for, then his friend, Dr. H. O. Walker, should have informed him, that before the report of the Board of Trustees was read, at the request of the chairman of the board, when the report was called for, instead of being read at the morning session, a copy of the report was given every

delegate, and to every one who was in the house at that time, with the request that before the House of Delegates reconvened for the afternoon session it should be carefully examined, to the end that when read, any and all members in the house might call for any information desired, not fully set forth in the report. At the afternoon session of the house, after several other matters had been disposed of, "The Report of the Board of Trustees for the year ending Dec. 31, 1905," was called for. Under the direction of the board this report was presented by the chairman. He read carefully and deliberately every part of the report that was deemed of sufficient importance to demand any special comment. As the financial part of the report was printed in detail, except an itemized statement of salaries, and the expense account of the organizer, Dr. McCormack; the receipts and expenditures were not read singly, but the sum total of each was stated, and then a few of the larger items read—the page of the report being called in every case as the reading progressed. These debit and credit tables were prepared by an auditing company of Chicago, chartered under the laws of Illinois, having no interest in the result of its examination; its sole object being to investigate the books and vouchers and accounts of THE JOURNAL office, and of the Treasurer. In order to refresh the memories of Dr. Carstens and of others who take the same view that he does of the work of THE JOURNAL office and of that of the Board of Trustees, I copy from THE JOURNAL, June 16, the last clause of the report of the Investor Audit Company, which examined the books for the Board last January:

> We have examined, properly approved and receipted vouchers for all expenditures, with the exception of a few which had not been returned by the bank at the time of our visit. We shall audit same on our next visit to the office of the Association. We counted the cash on hand and verified the cash in bank with statements furnished us by the bankers. The securities in possession of the Trust Company were examined and found to be intact. In addition to the above, we have verified the footings of the cash book and made such other checks as in our opinion were deemed necessary for the protection of the Association.
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> Considering the amount of detail handled by the Accounting Department, we found the work to be in excellent condition. There appears to be a continued improvement in the manner of handling the accounts and office work.
>
> We will be pleased to furnish you with any other information that you may desire. Yours faithfully,
>
> E. M. MILL, Manager.

Dr. Carstens complains that the salary list was not printed in full in the report. Such a list never appears in the report of any well-managed business association. The Board of Trustees, recognizing the right of every member of the House of Delegates and of any member of the Association to such information, carried to the session a sheet having every item on it, from which to read anything asked for. We did not feel that it was necessary to publish to the world the amount paid the editor and the 150 to 175 other employés, including the girls engaged by the hour in the mailing department. As was forcibly stated on the floor of the house by Dr. Montgomery, the salary of the editor was fixed, when he was elected, at $5,000 per annum, to be gradually increased in proportion to the results produced till it reached the sum of $10,000, which amount he has received since March of last year. Whether or not he has merited that amount, judge ye. The Board of Trustees thinks that he has. How well Dr. Simmons has done his work can be easily shown by reference to THE JOURNAL, July 9, 1898. The report of the Board of Trustees, made at Denver in that year, showed the total receipts of THE JOURNAL office, including $20,000 drawn from the Treasurer, to have been $47,140.07; expenses, $45,644.17, leaving a balance of less than $1,500 in THE JOURNAL office. The Treasurer's report showed a balance in his hands of $14,692.72. Ten thousand dollars of this amount was put aside for emergencies, making a sinking fund of $13,000. The weekly average issue of THE JOURNAL was then 11,470 copies, as compared with 38,000 for the year ending Dec. 31, 1905. I am glad that Dr. Carstens does not object to the salary paid our editor.

Had the full pay-roll of THE JOURNAL office been printed in the report, THE JOURNAL would have been at the mercy of any human vulture that might have desired to injure it, by attempting to entice from it any employé, by offering a few more dollars than he or she was receiving. No business man, firm, or corporation is ever guilty of such a stupendous piece of folly. Further:—the payroll is constantly changing, but all of the labor used in the mechanical and composing departments must be paid for at union rates.

In addition to the sheet containing the salary account, there was also on hand in Boston the sheet which contained the organization expense account, which was given to Dr. Coe, with permission to publish it if he wished to do so. The salary account was also put into his hands so that each and every one, whether a "kicker" or not, might read and compare, but not publish without permission of the House of Delegates. Dr. Carstens or Dr. Walker could have published the organization statement, had either of them wished to do so, for it was put in the hands of Dr. Coe to do with it as he pleased, but both report sheets were returned to the Chairman of the Board before the afternoon session adjourned. This makes it perfectly plain that the board had nothing to conceal and was wishing to conceal nothing.

The employment of Dr. McCormack as organizer since the annual session, in 1904, has been done under the order of the House of Delegates. He has been paid $5,000 a year and his expenses ever since he entered on the duties of that position. The Trustees felt one year ago that the organization had reached such a stage that this expense might be dispensed with, but on the direct request of the House of Delegates continued his services for another year, as they did again at the last session.

I am of the opinion that the House of Delegates would not have wanted to listen to the reading of a report of Dr. McCormack's traveling expenses, made up of railroad fares, board and incidentals from one place to another of his itinerary. These and similar accounts are all submitted to and passed on by the Board of Trustees, after which they go to the Audit Company. Every item of this and of all other accounts is on file in THE JOURNAL office and is open to the inspection of every member of the Association who may call at the office of THE JOURNAL. I may add parenthetically that I have had a personal experience in investigating a few business matters for friends in the office, and it was no trouble to find anything that was wanted. It always seemed to be a pleasure for the book-keeping department to look up any matter called for. The board will gladly furnish a report, covering all the itemized details of the business if the House of Delegates wishes it, and it will welcome any investigation made under the order of the House of Delegates. It is an utter absurdity to suggest an investigation of a business of the magnitude of THE JOURNAL office by a committee of physicians who are not practical book-keepers. The Board of Trustees long since abandoned any such piece of folly, and has the work done by expert accountants. Two audit companies have been employed since my connection with the board. If another investigation is wanted apart from that made by the board, then let there be selected by a committee in no wise connected with the management of THE JOURNAL a different expert accountant, and let him be sent there by the president of the Association with directions to go through the office in a systematic way and to send in his separate report to the next session of the Association. A committee of physicians would be a useless addendum to a financial investigation. Let it be understood that THE JOURNAL office and its affairs are open to the members of the Association at any time.

The organization expense account as handed Dr. Coe is as follows:

ORGANIZATION EXPENSE, 1905.

Dr. J. N. McCormack, salary	$4,999.92
Dr. J. N. McCormack, expense bill, June 13, 1904, to July, 1905	1,453.90
Drs. Ohls and Green	875.00
Express charges and postage	42.92
Expense to agents account of local society work	259.00
Jobbing	166.30
	$7,797.04

1906.

Dr. J. N. McCormack, salary, January to April, inclusive	$1,666.64
Dr. J. N. McCormack, expense bill, Sept. 4, 1905, to December, 1905	863.00
Jobbing, express, etc.	118.60
	$2,648.24

Drs. Ohls and Green are in THE JOURNAL office, but such of their time as is devoted to the work of Dr. McCormack is

charged to that account. One not conversant with such work as is done in THE JOURNAL office pertaining to the many subdivisions, such as the Council on Pharmacy and Chemistry, the Council on Medical Education, national education, etc., can not realize the kind of work done in these different departments.

Dr. Carstens says that he can readily see why the Trustees would oppose a resolution to investigate the financial condition of the Association. He assumes that they did oppose such action, that they voted against Dr. Walker's resolution. At the time the resolution to investigate was offered by Dr. Walker, I am of the opinion that not more than three or four of the Board were in the House of Delegates, and I *know* that not one of them offered a word of opposition to the resolution. The objection to this resolution was made by nearly every delegate present, as every one knows who was present at the meeting when "all who have grievances" were asked to air them.

The absurdity of the idea entertained by some of the "kickers" in regard to a further examination of the condition of the monetary affairs was evidenced by the suggestion made by some one, that all books, papers, accounts, vouchers and other matters should be boxed up and brought to the place of the annual session and examined by a special committee appointed at that session. Such an idea needs no further notice. Again, if those who object to the present management of THE JOURNAL are not willing to accept the report of the special accountant employed by the Board, are they sure that they would accept the report of any other expert accountant? The suggestion of Dr. Carstens that the Trustees should be the ones to offer the resolution of investigation for the "kickers" is a piece of folly which I feel sure was due to thoughtlessness on his part. To offer such a resolution would be to show a want of confidence on their part in the work done by themselves. It must be remembered that Dr. Simmons gladly welcomes any member of the Association to THE JOURNAL office, and Dr. Walker or Dr. Carstens could have free access to it and could avail themselves of such a visit to study the office and all of its methods. The idea that a committee of physicians could do any more than is done by the nine Trustees in going over the books and vouchers of the office—a work requiring two skilled accountants six or eight weeks to do, is absurd.

The motion of Dr. Jones of California to reconsider the tabling of the resolutions was a parliamentary move made for the purpose of still further emphasizing the action of the House. With all this the Trustees had absolutely nothing to do.

Now as to the Directory:—Dr. Carstens complains that not enough light was thrown on the matter of the purchase of the Standard outfit; and that no exact statement of the cost of it has ever been made. Dr. Carstens has certainly not read the reports of the Trustees, or the minutes of the House of Delegates for the past three years. Had he done so he would have known that the publication of a Directory and Blue-book had been reported on time and again within that time. He, or his friend, Dr. Walker, can recall the fight made against the publication of a directory by the Association last year at the Portland session—the fight being instigated by a rival directory in a certain city—and that the House by an almost unanimous vote ordered the Board of Trustees to proceed with their work of publication. At that time it was not possible to state the exact price at which the directory could be bought, but the amount put up for an option on the property was stated in the Report of the Board of Trustees for that year. The price had been agreed on, but under an obligation binding both parties, it could not be given out till the House of Delegates had acted on it. When this had been done, the price was no longer a secret, and in exhibit A of the Report of the Board of Trustees, in the letter of the Audit Company, in the first item of expense to which the company refers, appears the following statement:

Net investment in Directory to date, $10,868.39. This is made up as follows: Expenditures for salary, labor and material in preparing first edition, $5,042.89; Cost of Directory property, $6,035.50; making a total cost of $11,078.39; less advance sales Directory, $195.00, and advance advertisements, $45.00; $210.00; leaving net investment, so far, $10,868.39.

The secretary and editor in his report to the Trustees, gave the following additional information:

We have already secured about 4,600 subscribers to the Directory, and about $3,800 advertising contracts have been made. We expect to have about $5,000 worth of advertising. Of course this is being limited to absolutely unobjectionable matter, or we could treble this amount.

From present appearances we shall be able to get out the Directory without any loss, although this is merely a conjecture at this time. If we do, it will be remarkable, because we shall be at a very great expense for this first issue that will not be incurred in getting out future editions. This applies not only to the expense connected with gathering the fundamental information referred to above, but also to the fact that practically all of the matter will have to be set in type, much of which will in the future be utilized for succeeding editions.

Dr. Carstens talks about a directory costing $75,000.00, and that at $2.00, or at most $3.00 per volume, every member of the Association would purchase a copy. This shows that he is ignorant of the details of such work. Many of our members will not subscribe for *any* directory, and the price has been fixed at the lowest amount at which it is estimated that it can be produced. Future editions will be sold at a price to cover cost. The Association is not seeking to make money out of the Directory.

The Reprint Question.—The Trustees have this matter under advisement, and it is now unfinished business for our meeting in October.

Dr. Carstens complains at the price ($1.00) charged for the bound volumes of section reprints, which he intimates cost only 33 cents. The binding and postage alone on the volume subscribed for by Dr. Carstens last year cost the Association 43 cents. This does not include pay for press work, folding, gathering or paper. A close calculation of all such items will show a loss to the Association on section reprints. Instead of a profit of 66 cents, as stated by Dr. Carstens, the Association issues these transaction every year at a loss.

"Why should we accumulate money in stocks and bonds?" asks Dr. Carstens. Such a question made by a business man would need no answer, but, unfortunately, all of us are not business men, or, at least, we have sense enough to get some one to transact our business for us, so that the world does not find us out. No enterprise can be carried on in these days without money to tide over times of disaster. We have had several years of prosperity, but this will not continue, if we are permitted to judge the future by the past. A reaction must follow, and if we have no money then we must fail. Had we no reserve fund, nothing except individual donations could have been made to the California sufferers. The report showed our profits for the year 1905 to have been nearly $18,000.00 less than in 1904. This decrease was accounted for by our having refused $15,000.00 of advertisements that were barred by our rules of admission, and by the cost of maintaining our Council on Pharmacy and Chemistry, and our Council on Medical Education. This year one item alone, a new printing press, will cost us $20,000.00. A new linotype machine will add several thousand dollars to our expense account. As the Association grows, expenses increase *pari passu*. Without this reserve fund our Association would have little or no rating, and its contracts for paper and other stock essential to carrying on its work would not be eagerly sought for. Contracts are now made on the most advantageous terms. Everything is paid for when delivered; all discount being taken advantage of. Had we no money on hand such could not be done. The interest on the reserve will enable the Association more readily to undertake greater things along the line of scientific investigations, original research, etc. What could have been done, say in 1898? Every old member knows how the Association was handicapped in the past for lack of funds. Our officers who have this money under their care are all under heavy bonds, and hence the money can not be lost.

Dr. Carstens' view about publishing a journal without any advertisements is an ideal one, but ideals in this age are rarely attained. Many members would not want a journal with no advertising pages in it. From them they get information as to where they can purchase such supplies as they may need. Many read this part of THE JOURNAL first. What we now need and are striving for is a higher class of advertisements, all of them coming fully up to the highest standard of ethics.

The last section of Dr. Carstens' article, wherein he gives the Trustees advice, can be answered in one sentence. "Advice is the cheapest commodity on the market." This reply is written in no contentious spirit but to let the members of the Association know that THE JOURNAL force, from editor down to mailing girls, are doing their whole duty, and that the Board of Trustees is attempting conscientiously to do the work assigned them, without fear or favor.

We would add further that we welcome honest criticism, and when it is not made from impure motives (with which we do not charge Dr. Carstens, for we believe him to be a true friend to THE JOURNAL) we are ever ready to answer it to the best of our ability.

T. J. HAPPEL,
Chairman Board of Trustees.

Marriages

EDWARD C. ROSENOW, M.D., Chicago, to Miss Lydia Senty, of Arcadia, August 1.

IRA F. GOSE, M.D., Eureka Utah, to Miss Willie Sallee, of Danville, Ky., August 15.

JAMES M. COOPER, M.D., Detroit, Mich., to Miss Mattie Craft of Grass Lake, Mich., August 22.

IRVIN S. WORKMAN, M.D., Gambier, Ohio, to Miss Ruth Klinger, of Delaware, Ohio, August 14.

C. LOUIS HOFFFLER, M.D., Omaha, Neb., to Miss Marie E. Mallette, of Chelsea, Mass., August 19.

ISADOR S. TROSTLER, M.D., Orleans, Neb., to Miss Ruphelle Luce, of New Vineyard, Me., August 16.

PEDER SATHER BRUGUIERE, M.D., to Miss Nannie King, both of San Francisco, at Reno, Nev., August 20.

GEORGE HOPKINSON, M.D., Boston, Mass., to Miss Helen Wright Andrews, of Binghamton, N. Y., July 14.

WALTER REMSEN BRINCKERHOFF, M.D., formerly of Boston, but now of Honolulu, to Miss Nellie M. White, of Winchendon, Mass., at Honolulu, August 25.

Deaths

Reynaldo Juan Fitzgerald, M.D. Albany (N. Y.) Medical College, 1882; a member of the Association of Military Surgeons of the United States; surgeon of the Thirteenth Minnesota Infantry, U. S. V., and on duty with that command in the Philippine Islands; a member of the state and county medical societies; the first man to volunteer at the organization of the Minnesota National Guard in 1882, and major-surgeon in that regiment during the Spanish-American War; medical director of the Minnesota National Guard, with the rank of colonel on his return to the United States, and at the time of his death major and surgeon National Guard of Minnesota and assigned to the First Infantry; a prominent practitioner of Minneapolis, died at his home in that city, August 18, as the result of disease contracted in the Philippine Islands, aged 45.

Godfrey R. Martine, M.D. University of Vermont Medical Department, Burlington, 1862, a member of the American Medical Association; International Medical Congress, 1900; New York State Medical Association; formerly president of the Warren County Medical Society, the Tri-County Medical Society, and Warren County Medical Association, who established the Glens Falls Hospital in 1885 and was consulting surgeon for that institution; formerly coroner and health officer of Warren County; one of the oldest and most prominent physicians of Glens Falls, was struck, August 8, by a Hudson Valley Railway express car, two miles north of Glens Falls, and instantly killed, aged 69.

Charles David Hurt, M.D. University of Georgia Medical Department, Augusta, 1881; a member of the American Medical Association; ex-president of the Atlanta Society of Medicine; formerly professor of materia medica in the Southern Medical College, Atlanta; chief surgeon Georgia Railway and Electric Company; professor of therapeutics in the Atlanta School of Medicine; president of the medical board of Wesley Memorial Hospital and a member of the medical board of Grady Hospital; for thirteen years a resident of Atlanta; a Confederate veteran, died at his home in Inman Park, Atlanta, after an illness of more than eight months, August 12, aged 63.

James E. Smith, M.D. Albany (N. Y.) Medical College, 1889, and valedictorian of his class; a member of the Albany County (N. Y.) Medical Society and coroner of the county from 1890 to 1893; a lieutenant during the Spanish-American War and on duty in the Hawaiian Islands; afterward assistant surgeon of the Tenth Battalion, N. G. N. Y.; senior vice-commander of the Department of New York of the Spanish-American War Veterans, was stricken with paralysis at his home in Albany, August 13, and fell, fracturing his skull, dying at the Albany Hospital twenty-four hours later, aged 38.

Hunter P. Cooper, M.D. Medical Department of Columbian University, Washington, D.C., 1883; professor of obstetrics and gynecology in the Atlanta College of Physicians and Surgeons; gynecologist to Wesley Memorial Hospital, Atlanta; local surgeon of the Georgia Railway, Nashville, Chattanooga & St. Louis Railroad, Atlanta & Western Railway and Western of Alabama Railway; a member and ex-president of the Atlanta Society of Medicine, and a member of the Medical Association of Georgia, died at his home in Atlanta, August 24, from septicemia, aged 46.

William Octah Vance, M.D. Louisville National Medical College, 1889; Illinois Medical College, Chicago, 1895; one of the founders of the Louisville National Medical College and a professor in and member of the board of trustees of the institution; for twenty-five years principal of the colored high school in New Albany, Ind., and one of the most influential colored men of his city, died from heart disease at his home, August 16, aged 50.

Joseph W. V. R. Plummer, M.D. Southern Medical College, Atlanta, Ga., 1884; formerly surgeon in the Navy; at the time of his death city health officer of Key West, Fla., and twice mayor of that city, who had done special work in the treatment of yellow fever and other tropical diseases; some time commander of the Department of Florida in the Grand Army of the Republic, died at his home in Key West, August 8, from diabetes, after an illness of four months, aged 64.

Frank P. Grove, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1901, a member of the Medical Society of the State of Pennsylvania and of the Huntingdon County Medical Society, died at his home in Alexandria, Pa., August 20, from tuberculosis, after an illness of eighteen months, aged 30. The county medical society adopted appropriate resolutions regarding the death of Dr. Grove.

Robert J. Preston, M.D. University of Virginia Department of Medicine, Charlottesville, 1867; a member of the American Medical Association, superintendent of the State Hospital for the Insane, Marion, Va., and one of the most prominent alienists of that state, died suddenly from heart disease in New York City, August 20, while on his way to attend the meeting of the British Medical Association at Toronto, aged about 60.

Cornelius C. Beard, M.D. New Orleans (La.) School of Medicine, 1849; a veteran of the Civil War; one of the founders of the New Orleans School of Medicine and professor of anatomy in that institution; for many years a practitioner of New Orleans, died at his home in Brookline, Mass., May 15, after a prolonged illness, aged 78.

William R. Van Tuyl, M.D. Kansas City (Mo.) Medical College, 1889, contract surgeon in the United States Army during the Spanish-American War and on duty in the Philippine Islands, a prominent physician of Leavenworth, Kan., died at his home from heart disease, August 19, after a lingering illness, aged 42.

Bernardino Calabrese, M.D. University of Naples, Italy, 1861; for several years a surgeon in the Italian army and for a long time mayor of his native town of Samfele; for fifteen years a practitioner of Buffalo and official physician to the Italian consulate, died at his home, August 16, after a brief illness, aged 68.

Hugh Henry McIntyre, M.D. University of Georgetown Medical Department, Washington, D. C., of Randolph, Vt.; a veteran of the Civil War; special agent of the United States in connection with the arbitration at Paris in 1892 and 1893, died suddenly from heart disease at Barnard, Vt., August 13, aged 60.

Frederick J. Owens, M.D. Philadelphia College of Medicine and Surgery, 1853; surgeon of the First Delaware Volunteer Infantry during the Civil War; formerly a practitioner of Harrington, Del., died at his home in Denton, Md., from senile debility, August 16, aged 84.

Armstead Jackson Patterson, M.D. Jefferson Medical College, Philadelphia, 1867, a member of the Medical Association of North Carolina, died at his home in Liberty, N. C., July 5, from septicemia following a double pyonephrosis, after an illness of four months, aged 65.

John A. Rice, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1861; a pioneer of Waukesha County, Wis., and for several terms state senator, died at his home in Merton, Wis., August 18, after an illness of one year, aged 75.

Melvin F. Greenfield, M.D. New York University, New York, City, 1881; a former practitioner of Durhamville, N. Y.; for a number of years a medical examiner in that state, died suddenly at his home in Rockland, Mass., August 9, from heart disease, aged 47.

W. A. O'Daniel, M.D. Kentucky School of Medicine, Louisville, Ky., 1885, formerly city physician of Macon and later assistant physician at the State Sanatorium, Milledgeville, Ga., died at his home in Bullards, Ga., August 8, after a long illness, aged 41.

Frederick A. Roberts, M.D. Medico-Chirurgical College of Philadelphia, 1901, a trustee of the Public Library of Wilmington, Mass., died at his home in that place August 11 from peritonitis following an operation for appendicitis, aged 33.

Samuel Wayne Gamble, M.D. Medical College of the State of South Carolina, Charleston, 1888, formerly a member of the House of Representatives of South Carolina, died at his home at Gourdin, S. C., May 22, after an illness of three days.

Joseph A. Stansell, M.D. Starling Medical College, Ohio, 1865, dean of the medical profession in Forest, Ohio, where he has lived for nearly half a century, died at his home, August 11, from Bright's disease, after an illness of several weeks.

George Washington Ewen, a member of the Powell County (Ky.) Medical Society and an esteemed practitioner of Slade, died at his home in that place, August 1, from tuberculosis, after an illness of two years and four months, aged 48.

James MacNider, M.D. College of Physicians and Surgeons in the City of New York, 1896, formerly an interne in Roosevelt Hospital, New York City, died May 26 in a sanitarium in New York, from pneumonia following influenza, aged 32.

Alvah D. Dearborn, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1870, city physician at Somerville, Mass., for several years, died at his home August, 19, after an illness of two years, from heart disease, aged 64.

James Napoleon Rutherford, M.D. Kentucky School of Medicine, Louisville, 1893, died at his home in Cotton Gin, Tex., July 12, from carcinoma of the pancreas, after an illness of two and a half months, aged 49.

Austin F. Morris, M.D. Bellevue Hospital Medical College, New York City, 1893, died at his country home in Warren County, N. J., August 22, from the effect of an automobile accident a year before, aged 38.

William Fegers, M.D. Northwestern University Medical School, Chicago, 1879, of McHenry, Ill., died suddenly at his camp at Palm Beach, Pistakee Bay, August 7, from heart disease, aged 72.

James Grange, M.D. University of Victoria College, Coburg, Ontario, 1860, a member of the Tri-State Medical Association, died at his home in Chattanooga, Tenn., from heart disease, August 3, aged 81.

John L. Shepard, M.D. Rush Medical College, Chicago, 1865, for many years a practitioner in Sheboygan Falls, Wis., died in the National Soldiers' Home, Milwaukee, August 17, aged 75.

Robert R. Livingston, M.D. Omaha Medical College, 1888, formerly of Plattsmouth, Neb., died at St. Elizabeth's Hospital, Lincoln, from an overdose of morhpin, July 23, aged about 40.

Sereno Burnell, M.D. New York University, New York City, 1859, one of the best known practitioners of Suffolk County, N. Y., died at his home in Holbrook, August 3, aged 87.

Edward L. Birch, M.D. Miami Medical College, Cincinnati, 1879, died at his home in Robinson, Ill., August 7, from ptomaine poisoning, after an illness of two months.

Frank F. Laird, M.D. Hahnemann Medical College, Philadelphia, 1880, formerly of Utica, N. Y., died at Atlantic City, N. J., August 20, from cardiac asthma, aged 50.

Reuben C. Curry, M.D. Medical Faculty of the University of Toronto, 1857; one of the oldest practitioners of Ontario, died recently at his home in Guelph, Ontario.

Wesley F. Collier, M.D. Missouri Medical College, St. Louis, 1880, formerly of Thomasville, Mo., died at his home in Benton, Mo., June 30, from nervous prostration.

William S. Campbell, M.D. Rush Medical College, Chicago, 1885, died suddenly at his home in Detroit, Mich., July 13, as a result of heat prostration, aged 68.

Louis Welty Fahrney, M.D. Jefferson Medical College, Philadelphia, 1891, died at his nome in Hagerstown, Md., August 22, from nephritis, aged 48.

George D. Hamilton, M.D. University of Nashville Medical Department, 1899, a practitioner of Jackson, Tenn., surgeon of the Second Infantry, Tennessee National Guard, died in St. Joseph's Hospital, Memphis, August 18, after an operation for gallstones, aged 36.

D. W. L. Herrod (Examination, Indian Territory), was shot by Dr. Price Patterson at Maysville, I. T., August 11, and died a few hours later.

Jonathan G. Pelton, M.D. Geneva (N. Y.) Medical College, 1846, died at his home in Minneapolis, Minn., August 26, aged 81.

William Neil, M.D. St. Louis Medical College, 1877, died at his home in Pattonsburg, Mo., July 1, aged 64.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

METHODS OF PREPARING CATGUT.

SAYRE, PA., Aug. 15, 1906.

To the Editor:—Kindly give the method of preparing "Mayo's (Iodized) catgut." Do the Mayos use the iodized gut exclusively, or do they also use the chromicised catgut and silk for part of their work? Will you also kindly give method of preparing chromicised catgut (20 day). T. J. W.

ANSWER.—The Mayos have no method of their own for sterilizing catgut, but use what is known as the "Bartlett Gut," prepared after the method of W. Bartlett of St. Louis. Bartlett describes this method in the *Interstate Medical Journal*, March, 1905, in brief as follows:

"The strands are cut in convenient length, say 30 inches, and made into little coils about as large as a silver quarter. These coils are then strung like beads on to a thread so that the whole quantity can be conveniently handled by simply grasping the thread. The string of catgut coils is dried for one hour at a temperature of 180 F. and then for a second hour at 220 F., the change in temperature being accomplished gradually. The catgut is then placed in liquid albolene, where it is allowed to remain until perfectly clear, in the sense that the term is used in the preparation of histologic specimens. This is usually accomplished in a few hours, though it has been Bartlett's custom to allow the gut to remain in the oil over night. The vessel containing the oil is next placed on a sandbath and the temperature raised during one hour to 320 F., and this temperature is maintained for a second hour. By seizing the thread with sterile forceps the catgut is lifted out of the oil and placed in a mixture of iodin crystals, 1 part, in Columbian spirits, 100 parts. In this fluid it is stored permanently, and is ready for use in twenty-four hours; the thread is then cut and withdrawn."

Chromicised catgut may be prepared as follows: The gut is freed from fat by soaking for twenty-four hours in ether. It is then soaked for about twenty-four hours in a watery solution of chromic acid from 1 to 4 per cent., dried in an oven, and boiled in cumol. The catgut may be chromicised after being sterilized by almost any method, as for instance the one mentioned above, by simply soaking the gut in a sterile, watery solution of chromic acid about one part to a thousand, from twenty-four to forty-eight hours.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of Medical Officers, U. S. Army, for the week ending Aug. 25, 1906:

Deshon, George D., surgeon, left Fort Des Moines, Iowa, with Eleventh Cavalry, en route to Camp of Instruction, Fort Riley, Kan.

Havard, Valery, asst.-surgeon general, Fauntleroy, P. C., asst.-surgeon, detailed to represent the Medical Department of the Army at the fifteenth annual meeting of the Association of Military Surgeons of the United States, to be held in Buffalo, N. Y., Sept. 11 to 14, 1906.

Huntington, P. W., asst.-surgeon, left Fort Rosecrans, Cal., en route to Camp of Instruction, Murray, Wash.

Waterhouse, S. M., asst.-surgeon, left Fort Worden en route to Camp Tacoma, Wash., for duty.

Hanner, John W., asst.-surgeon, left West Point, N. Y., with cadets on practice march.

Walker, Freeman V., asst.-surgeon, having been appointed to his former grade of assistant surgeon with rank of captain, is placed on the retired list of the Army, by direction of the President, Aug. 20, 1906.

O'Connor, R. P., asst.-surgeon, granted thirty days leave of absence.

Noble, R. E., asst.-surgeon, leave of absence extended one month.

Wing, Franklin F., dental surgeon, ordered to report to commanding general, Camp of Instruction near Fort D. A. Russell, Wyo., for duty.

Cass, W. E., contract surgeon, reports at Fort Worden, Wash., for temporary duty.

Wertenbaker, C. I., dental surgeon, returned to Madison Barracks, N. Y., from leave of absence.

Cutliffe, William O., contract surgeon, arrived at San Francisco, Cal., on three months' leave of absence.

Sanford, Joseph L., contract surgeon, arrived at San Francisco, Cal., on one month's leave of absence.

Cattermole, Charles A., contract surgeon, ordered to proceed from Manhattan, Nev., to San Francisco, Cal., and take transport to sail from the latter place on or about Sept. 5, 1906, for the Philippine Islands, and on arrival at Manila to report in person to the commanding general, Philippines Division, for assignment to duty.

Prentice, Arthur D., contract surgeon, relieved from duty in the Philippines Division, and ordered to proceed by first available transport to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending Aug. 25, 1906:

Elliot, M. S., surgeon, detached from the *Florida* and ordered to the *St. Louis*.

Iden, P. A. surgeon, to the *Florida*.

Pease, T. N., asst.-surgeon, resignation as an assistant surgeon in the Navy accepted to take effect August 21, 1906:

Jones, A. McK., acting asst.-surgeon, to the Naval Hospital, Norfolk, Va.

Baker, M. C., acting asst.-surgeon, to the Naval Hospital, Newport, R. I.

Longabaugh, R. I., acting asst.-surgeon, ordered to Naval Hospital, Mare Island, Cal.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 22, 1906:

Pettus, W. J., assistant surgeon-general, granted leave of absence for thirteen days, from August 20.

Rosenau, M. J., P. A. surgeon, granted leave of absence for fourteen days from August 20.

Nydegger, J. A., P. A. surgeon, leave of absence granted for three months from August 11, amended to read one month and fifteen days from September 3.

Cumming, H. S., P. A. surgeon, granted leave of absence for one month from September 15.

Anderson, J. F., P. A. surgeon, detailed as temporary chairman of board convened July 2, 1906, to investigate the origin and prevalence of typhoid fever in the District of Columbia, to serve during the absence of Asst. Surgeon M. J. Rosenau, on fourteen days' leave from August 20.

Hunt, Reid, chief Division of Pharmacology, and Rochrig, A. M., pharmacist, detailed to represent the service at the 54th Annual Meeting of the American Pharmaceutical Association at Indianapolis, September 3.

Porter, J. Y., sanitary inspector, granted leave of absence for seven days from August 6.

Dunn, James, acting asst.-surgeon, granted leave of absence for twenty-three days from August 13.

Townsend, F., acting asst.-surgeon, granted leave of absence for seven days.

Goodman, F. S., pharmacist, granted leave of absence for ten days, from September 10.

Ryder, L. W., pharmacist, granted leave of absence for twenty-five days from August 20.

Carlton, C. G., pharmacist, granted leave of absence for twenty-four days on account of sickness from July 9.

Hall, L. P., pharmacist, granted leave of absence for seven days from August 17, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 24, 1906:

SMALLPOX—UNITED STATES.

Illinois: Chicago, August 11-18, 2 cases.
Louisiana: New Orleans, August 4-18, 14 cases.
Oregon: General, July 1-31, 11 cases.
Tennessee: Knoxville, August 4-11, 1 case.
Utah: General, July 1-31, 32 cases.
Wisconsin: Appleton, August 11-18, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 7-14, 2 cases.
Brazil: Bahia, June 30-July 28, 15 cases; Rio de Janeiro, July 1-8, 1 case; July 22-29, 2 cases, 1 death.
Chile: Antofagasta, July 1-13, 23 cases, 4 deaths.
France: Paris, July 21-August 4, 7 cases.
India: Calcutta, June 30-July 7, 11 deaths; Madras, July 7-13, 3 deaths.
Russia: Odessa, July 21-28, 3 cases, 1 death; St. Petersburg, July 7-28, 8 cases, 3 deaths.
Siberia: Vladivostock, June 28-July 5, 3 cases.
Spain: Seville, July 1-31, 20 deaths.
Turkey: Constantinople, July 21-29, 1 death.
Uruguay: Montevideo, June 1-30, 1 death.

YELLOW FEVER—UNITED STATES.

Louisiana: New Iberia, August 19, 1 case.

YELLOW FEVER—FOREIGN.

Mexico: Merida, July 29-August 4, 6 cases, 2 deaths; Progreso, August 7, 1 case, 1 death.

CHOLERA.

India: Calcutta, June 30-July 7, 18 deaths; Madras, July 7-13, 12 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, August 30, 1 death.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, July 1-8, 2 cases; July 22-29, 1 case.
Chile: Antofagasta, July 1-13, 4 cases, 2 deaths.
China: Hongkong, June 30-July 7, 12 cases, 7 deaths.
Egypt: Alexandria, July 15-27, 11 cases, 6 deaths; Port Said, July 17, 1 case; Suez, July 14-27, 6 cases, 3 deaths.
Assiout Province: Assiout, July 19-28, 2 cases.
India: General, June 30-July 7, 630 cases, 536 deaths; Calcutta, June 30-July 7, 9 deaths.
Japan: Formosa, General, July 10-30, 45 cases, 40 deaths.
Persia: Seistan, June 23-July 22, 90 cases, 85 deaths.
Peru: Lima, July 14-21, 1 case; Mollendo, July 4-18, 2 cases, 2 deaths.

Society Proceedings

COMING MEETINGS.

Medical Soc. of the Missouri Valley, Council Bluffs, Iowa, Sept. 6-7.
Med. Soc. of the Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug. 20-22, 1906.

The President, DR. BART E. MACKENZIE, Toronto, in the Chair.

Dr. MacKenzie delivered the president's annual address. He referred to the great problems that now confront the medical profession as a whole. These problems should be recognized to relate as closely to orthopedic surgeons as to any physicians; the specialist in any branch of medical work must always remember that first of all he is a member of the great profession of medicine, and that what affects the profession as a whole affects him. Subjects that especially unite orthopedic surgery to general medicine are tuberculosis and fresh fractures. Perhaps no group of men are so well qualified to care for fresh fractures as ortnopedic surgeons. The orthopedist's experience in local treatment trains him especially well to treat also early paralyses, and neuroses that simulate organic lesions.

The president referred to the deaths of members during the year and Dr. Roswell Park, Buffalo, spoke of the pathology in the case of Dr. Louis A. Weigel, one of the members who had died. He said that the *x*-ray dermatitis on Dr. Weigel's hands came on about two years before he died. The right hand and part of the left had to be amputated on account of carcinomatous development, and in February, 1906, metastases were removed from the axillæ, and the breast was amputated. Dr. Weigel's illness was exceedingly painful, but was most bravely borne. He died a victim to his devotion to the Roentgen ray.

With reference in general to the effect of the Roentgen ray on the surface structures, Dr. Park said that apparently the blood vessels were primarily affected, producing blood stasis. A toxic substance is evolved, and this produces the dermatitis. The Roentgen ray can produce keratosis, but leads to cancer only indirectly through chronic irritation in the same way that a burn by ordinary heat may lead to malignant development.

Officers Elected.

The following officers were elected: President, Dr. Joel E. Goldthwait, Boston; vice-presidents, Dr. Henry Ling Taylor, New York; and Dr. Ansel G. Cook, Hartford, Conn.; secretary, Dr. Robert B. Osgood, Boston; treasurer, Dr. E. G. Brackett, Boston; executive committee, Dr. John Ridlon, Chicago; Dr. D. R. Townsend, New York; Dr. H. Augustus Wilson, Philadelphia; Dr. Goldthwait and Dr. Osgood, ex-officio.

The next meeting will be held in Washington, D. C., as a section of the Congress of American Physicians and Surgeons.

Scoliosis.

DR. EDWIN W. RYERSON, Chicago, read a paper entitled "A Case of Sclerosis Due to Injury of Abdominal Muscle." A typical sclerosis rapidly developed after abdominal section that had been made to repair a penetrating wound over McBurney's point. The wound had been kept open for drainage. The deformity was increasing in spite of treatment by exercises. If the condition continued to become worse, the author was disposed to consider excision of the scar and shortening of the now lengthened muscles.

Experimental Pressure on Spine.

DR. ROBERT SOUTTER, Boston, read a paper entitled, "A Study of the Effects of Pressure on the Curve and Rotation of the Spine." Cadavera of subjects 5 and 12 years old were used. The spines were exposed by dissection, but the ligaments and rib attachments were not disturbed. The effects of side pressure at various levels and with the subjects in suspension, sitting, prone, and supine were studied. The results showed that pressure on the ribs could be utilized to correct lateral curvature, and indicated in which position of the subject this correction would be most effectively applied for the various types of curve.

(To be Continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

Despite the extreme heat, which was said to be the greatest in the history of Toronto for many years, the second meeting of the British Medical Association held outside of the United Kingdom was a marked success, and reflected the greatest possible credit on the association and on the various committees which had the arrangements in charge. These committees did their work thoroughly and well, the space provided for the registration and office force, the registration and the administration bureaus was ample, the section meeting-places were well grouped together, and, as a rule, excellently adapted for their purposes.

Toronto and Its University.

The University of Toronto, beautifully located on high ground, within easy distance of the central portion of the city, gave up practically all its buildings for the use of the association. In the main building were located the administration office, registration bureau, information bureau, rest, smoking and tea rooms, post office, exhibits, office of the *British Medical Journal* and dining hall. Here, also, the sections on dermatology, laryngology and otology, obstetrics and gynecology, ophthalmology, pediatrics and psychology held their sessions. The sections on anatomy, and pathology and bacteriology met in the biological building; the sections on medicine, physiology and therapeutics in the medical building, the section on state medicine in the new science building, and the section on surgery in the chemistry building. The pathologic museum was located in the laboratories of the medical building.

Registration.

The total registration up to noon August 24, was 1,986, of whom 650 were from the United States. Of these 1,390 were registered as members and 596 as visitors.

Of those registered as members, 1,078 were from the Dominion of Canada, 145 from England, 48 from Scotland, 19 from Ireland, 4 from Wales, 17 from the British colonies, 3 from Continental Europe, and 54 from the United States, chiefly from the following states: New York, 9; Illinois, 7; Massachusetts, 5; Michigan, 4, etc. Of the 596 visitors, 8 registered from Europe, 26 from Canada, and the remainder, 562, from the United States, chiefly as follows: New York, 152; Pennsylvania, 55; Ohio, 49; Illinois, 47; Michigan, 43; Massachusetts, 38; Maryland, 36.

Work in all the sections commenced on the morning of August 21 and continued each morning from 9:30 until 12:30 during the meeting.

Opening Ceremonies.

On the afternoon of August 21, the formal opening exercises were held in the beautiful new, and still unfinished, convocation hall on the university grounds. The officials and guests in academic gowns and uniforms formed in procession in the quadrangle and marched across the grounds to the hall. The valedictory address was delivered by the retiring president, Mr. George Cooper Franklin, Leicester, who introduced the President-elect, Dr. Richard Andrew Reeve, dean of the Medical Faculty of the University of Toronto, and thus formally inducted him into office. Dr. Frederic N. G. Starr, Toronto, honorary local secretary, presented the president with his badge of office, a gold locket bearing the arms of the City of Toronto and of the university, and containing a photograph of the president's "very own child," convocation hall.

Reception to Delegates and Addresses of Welcome.

Dr. Starr then called the rolls of the vice-presidents, of delegates from the council, from representative meetings, from universities and colleges, from colonial branches, from the American Medical Association, and from Europe, and each delegate, as his name was called, came to the platform and was welcomed by the president.

The retiring president, Mr. George Cooper Franklin, F.R.C.S., was elected a vice-president of the association for life on account of his distinguished services to the association, and the same honor was conferred on Sir Victor Horsley.

Addresses of welcome to the association were delivered by Mayor Coatsworth of Toronto, on behalf of the city; by Mr. Irving H. Cameron, F.R.C.S., Toronto, on behalf of the local reception committee; by Dr. Alexander McPhedran, Toronto, on behalf of the Canadian Medical Association, and by Dr. George A. Bingham, Toronto, on behalf of the Ontario Medical Association.

President's Address.

In his annual address, which closed the proceedings, Dr. Richard Andrew Reeve mentioned briefly the history of the association, which in 1832 numbered only 140, but which now has a membership of more than 20,000. He made special mention of the research work which the association is supervising, and on which it has spent thus far about $70,000 of its funds. He then spoke of the progress of medicine during the last decade, giving due credit to Lister, Pasteur, Metchnikoff and Behring, through whose efforts had been given to the world antisepsis, asepsis, immunity and serum therapy. Nursing has become a fine art; diphtheria has been largely robbed of its terrors; and the mortality of typhoid fever has been decreased one-half, but notwithstanding all this the mortality from cancer is steadily increasing; tuberculosis is still prevalent, and the death rate from infantile diseases is very high, but not now on the increase. There is still ample scope for state medicine to apply its persuasive powers until men are made to think aright about matters which affect the health and well being of the community. In the matter of compulsory vaccination, the paternalism of the state with the aid of the medical profession should override all scruples. When the procedure is done aseptically with pure vaccine, the risk is practically nil. He advocated the prophylactic non-medical treatment of disease. The best remedies are not drugs, but diet, exercise, bathing and massage. These are also preventives of disease, and if they be followed, the common or ordinary complaints will be in a large degree averted. He paid grateful tribute to Sir Victor Horsley for his research wark in physiology, and mentioned especially the work of the lamented Lazear and Meyers.

Honorary Degrees Conferred.

On Thursday the Senate of Toronto University conferred the honorary degree of doctor of laws on the following visitors and delegates: Dr. W. J. Mayo, Rochester, Minn., president of the American Medical Association; Dr. Louis Lapicque, Paris; Prof. Dr. L. Aschoff, Freiburg, Germany; Sir Thomas Clifford Allbutt, Cambridge; Dr. A. H. Freeland Barbour, Edinburgh;

Sir Thomas Barlow, M.D., London; Sir James Barr, M.D., Liverpool; Sir William Broadbent, M.D., London; Dr. Henry William Langley Brown, West Bromwich, chairman of the council of the British Medical Association; Mr. George Cooper Franklin, F.R.C.S., Leicester, past-president of the British Medical Association; Dr. W. Dobinson, Halliburton, London; Sir Victor Horsley, F.R.C.S., London; Dr. Donald McAlister, Cambridge, president of the British Medical Council, and Sir William Julius Mickle, London.

THE GENERAL ADDRESSES.

Teaching of Obstetrics.

This subject was chosen by Dr. W. S. A. Griffith for the address on obstetrics. He says that some of the obvious imperfections in the teaching of obstetrics are for the most part due to the difficulty of providing practical clinical teaching. When attended by students who have had the necessary preliminary clinical teaching the out-patient maternities provide the most important and valuable training that any medical student can obtain, for as in private practice he is then placed almost entirely on his own resources. Another factor which has delayed the provision of adequate teaching in obstetrics, is the old ingrained idea that the process of labor is a single function of Nature, requiring for the most part a competent nurse only and that the practitioners of obstetrics, although recognized in theory as of equal standing, are to be looked down on in comparison with their colleagues in the other great branches of medicine and surgery. As the result of this, both in teaching and in examinations, the study of obstetrics has been relegated to a position totally unworthy of its immense importance to the practitioner and to the national welfare. Another defect in the teaching is due to the fact that the lecturers frequently have had little experience in the practice of obstetrics. The lecturer presides over no obstetric clinic, and has often had but little experience. He is an obstetrician in name, not in practice. In many of the provincial schools the lecturer is a successful general practitioner, to whom the fates have given a large obstetric experience, but whose experience as a teacher may have been quite inadequate. To place the teaching of obstetrics on the same basis as the teaching of medicine and surgery, it is essential that the clinical teaching be given in hospitals provided for the purpose, where a sufficient and continuous series of patients can be admitted, and having a large externe department where the advanced students can attend patients at their own homes. Lying-in wards in a general hospital would be equally valuable if there were a sufficiently large number of beds to ensure a regular series of patients in sufficient numbers. A large number of cases is less of a necessity than a continuous series. Every clinical teacher of obstetrics should be a practitioner of obstetrics having charge of the obstetric wards and externe maternity department, whose office as professor or lecturer would necessarily terminate with the cessation of his clinical duties. While it is perfectly clear that there are many general practitioners able to give excellent instruction in some of the details of practical midwifery, it is equally certain that there are many others whose methods of practice, especially in the disregard of aseptic precautions, would make them dangerous teachers, and would lead to the continuance of methods which tend to the perpetuation of the still high mortality from puerperal fever. The training of the student is also discussed.

Technic of Operations on Central Nervous System.

Sir Victor Horsley discussed this subject in his address in surgery. He said that the advance in technic of the surgical treatment of diseases of the brain and the spinal cord has been relatively less than the improvement in our knowledge of the seat and nature of the diseases for which surgical intervention is useful and necessary. Correct diagnosis of these affections is still far to seek, and yet operative treatment in such a difficult field is often expected to yield equally good results as the relatively easier and simpler work of curing hernias or of removing abdominal tumors. In this connection Horsley considers both the palliative and the curative surgical procedures to be adopted, the details of these procedures, such as previous preparation, anesthesia, maintenance of the bodily temperature, etc. Although he at one time favored a combined anesthesia of morphin with chloroform, he now uses pure chloroform. Ether he regards inadmissible as an anesthetic in operations on the central nervous system. To prevent shock and to maintain the physiologic energy during these operations on the brain, the wound should be irrigated constantly, usually with a solution of sublimate, 1 to 10,000, or with saline solution at a temperature of 115. This will also arrest capillary and arterial hemorrhage. Venous bleeding and capillary oozing can be controlled by the inhalation of oxygen. As to the method of opening the skull, the bone should be divided with as little vertically applied force as possible and removed with the least possible pressure on the brain and dura. This can best be done by first removing a trephine disc, then marking with a large saw the area to be removed, and finally cutting away the bone with a large bone forceps, all traction being directed outward. Horsley says that the less drainage is employed the better, and consequently every effort should be made to close the skin wound as early as possible. In all these cases operations should be resorted to as early as possible and the tumor should be freely exposed and examined and extirpated with the surrounding tissue. If it can not be removed without undue interference with important or essential structures, there remains some possibility of its undergoing retrogression in a certain number of cases.

The Circulation Viewed from the Periphery.

Sir James Barr took the above as the subject of the address in medicine. Diseases of the heart most frequently arise from causes acting on the periphery and the man who studies the circulation with the aid of the stethoscope only, is a positive danger to society. The capillaries varying from 0.5 to 1 mm. in length and from 7 to 13 microns in diameter, have a blood pressure of from 50 to 2,000 mm. of water and a velocity of from 0.5 to 25 mm. per second. Attempts to arrive at their capacity or sectional area have given unreliable results, because of the complicated factors influencing the pressure and rate of flow. Barr estimates the velocity of the capillary circulation by pressure on the skin driving out the blood, and noting the time occupied in its return. The velocity of the flow and the pressure stand in an inverse relation to each other; the greater the obstruction to the outflow the greater the capillary pressure and the less velocity of the blood in them. If an obstruction to venous outflow is imposed, the pressure in the veins tends to approach but does not equal that in the capillaries, and the pressure in the capillaries approaches but does not equal that in the arteries. Gravity increases the pressure in the capillaries in a varying degree in different persons, but seldom to more than half the difference in the hydrostatic pressure. The velocity in the capillaries varies as the general blood pressure, but is diminished by contraction of the arterioles which supply the part. The blood in the capillaries becomes surcharged with carbon dioxid when the velocity is reduced below 1 mm. per second, giving a dusky hue to the skin; this is often more apparent in the upper extremities because the circulation is more active in the capillaries of the feet on account of gravity. Viscosity of the blood, normally five times that of distilled water, varies greatly, is increased by CO_2, diminished by high temperature, and is increased in many diseases and forms the chief obstacle to the flow of blood through the capillaries. The arterioles interpose an obstruction which reduces the effect of arterial pressure on the capillaries; hence the more the arterioles are contracted the less the pressure in the capillaries and *vice versa*. The regulation of the circulation by the vasomotor nerves saves the nerve centers of the brain from being completely depleted as happens to a rabbit with paralyzed vasomotor nerves when he is hung up by the ears. The varying pressure to which the walls of the capillaries are subject and the permeability of the vessel walls account, in the author's opinion, for the phenomena of transudation and absorption, without assuming a secretory activity on the part of the endothelia. Liquid is forced out near the arterial end where the pressure is high

and enters again near the venous end where pressure is low. A high pressure causes the exudation of a liquid low in albumin because albumin does not pass out as readily as water.

The capillary circulation of various areas of the body merits special consideration. In the skin the fulness of the capillaries varies greatly from variations in the arterioles under vasomotor control; in many states of pallor they are early, in local syncope, entirely empty. With general vasomotor paralysis the intracapillary pressure is increased, the velocity diminished; in local paralysis, the general blood pressure being maintained, both velocity and pressure are increased. After meals there is an exudation of lymph so that blood taken from the finger is mixed with this lymph and this mixture showing increase of leucocytes, has fallaciously led to the belief in a general digestion leucocytosis not shown in this way. The author admits a digestion leucocytosis, but it is in the splanchnic area, the capillaries given off in the deeper structures are large and subject to high pressure to provide for secretion, while the later derived vessels are fine, ramify near the surface, are under low pressure, and here is where absorption takes place. The capillaries of the liver are very permeable and exudation readily takes place in the first stage of cirrhosis or in cardiac weakness. The liver acts as a reservoir for the right side of the heart.

The capillaries of the kidney are protected from excessive pressure by contraction of the arterioles, and from backward venous pressure by a second set of veins. In orthostatic albuminuria dilatation of the vessels occurs in the upright posture, in contracted kidney the pressure is high, the filtrate bulky, but not concentrated.

The capillaries and arterioles of the muscles are supplementary to those of the splanchnic area. The capillaries and arterioles of the brain are not controlled apparently by vasomotor nerves. The flow through them is rapid and the lateral pressure comparatively small. Hence exudation is small and the cerebrospinal fluid is poor in albumin. The coronary vessels also appear to be devoid of vasomotor nerves; the larger branches under the strain of aortic pressure are very liable to degeneration, but the terminal branches are not usually much affected. Hence if a coronary artery is blocked, the heart may be supplied from the venous side. The circulation in the lungs depends chiefly on the force of the right heart. The vessels are subject to very slight change of caliber under nervous action. Large areas may be cut off by inflammation or pressure and then the burden on the right heart is greater. Hence the chief cause of death in pneumonia is failure of the right heart. The lungs act as a reservoir to the left side of the heart.

The lymph circulation depends on the capillary circulation, but Oliver has shown that it is markedly influenced by certain ingredients of the food, in themselves not nutritive, such as uric acid, xanthin, etc., which have the power to influence the capillary circulation. The flow in the veins is subject to little obstruction to the vessel walls and depends on three factors: (a), action of respiration, inspiration causing a negative, expiration a positive pressure in the large veins near the chest; (b), hydrostatic effect of the column of blood; (c), the pressure transmitted from the capillaries.

After explaining the nicety of the relations between the resiliency of the arteries and the action of the heart, the significance of a slow transmission of the pulse wave as evidence of a properly yielding artery, Barr states that digitalis is sometimes useful in aortic regurgitation although usually condemned in this disease. A combination of cardiac tonics with vasomotor relaxants is sometimes useful, but it is always well to have a clear indication of the object to be accomplished. The following pertinent sentence is worthy of marked attention. "The circulation of the blood is one of the most perfect pieces of mechanism in the universe, and no amateur should be trusted to keep it in repair, yet people pour tons of baneful drugs down their throats every year on the recommendation of advertising quacks, who care nothing for the lives and health of the community, and care for nothing but their money." The relations of arterial pressure are explained at some length and the point is brought out that it is a relaxed rather than a contracted artery which expands in the systole and which becomes tortuous.

Entertainments.

The entertainment provided for the delegates included a garden party given by the lieutenant-governor and Mrs. Mortimer Clarke, in the Government House grounds, on Tuesday afternoon; a reception by the president and Mrs. Reeves on the university quadrangle on the same evening; garden parties given by H. C. Cox, Esq., and Mrs. Cox and by the trustees of the Toronto General Hospital on Wednesday afternoon; a reception given by the mayor and city council at the new city hall on the same evening; a band concert in the dean's garden at the University on Thursday evening; a garden party on the invitation of E. B. Osler, M.P., and Mrs. Osler at Rosedale Friday evening, and a reception given by the commander and the members of the Royal Canadian Yacht Club at the club house on the island on the same evening. There were also a number of special entertainments for the ladies and a number of excursions on Saturday to Niagara Falls, Muskoka Lakes, the Ontario Agricultural College at Guelph, etc.

Dominion Alliance Luncheon.

At a luncheon given by the Dominion Alliance to the association, a strong representation of temperance workers was present.

The principal address was made by Sir Victor Horsley, who spoke strongly against the use of alcohol as a drug and mentioned that for several years the British government had been urged to take more definite steps to give both hygiene and temperance a prominent place in the elementary instruction of the nation. He stated that 40 years ago the expenditure for alcohol in the seven great London hospitals was about $40,000 and for milk about $10,000, while at the present time the expenditure for alcohol was about $15,000 and for milk about $40,000 annually, showing that the two liquids had changed places. Action has long been urged by the association whereby the educational value of temperance and hygiene might be more fully recognized. He expressed the hope that progress would continue along these lines whereby Great Britain would assume her proper place, would resist the physical deterioration of nations and give due prominence to conditions making for improvement.

Dr. George Sims Woodhead, Cambridge, was of the opinion that there had been a change of opinion in regard to the use of alcohol and that men who at one time had looked on alcohol as valuable in the treatment of febrile conditions, now believed that the agent exercised an injurious effect on the resisting powers of the patient against disease. He recalled the statement of Muirhead that he had never any fear for pneumonia patients who were total abstainers. He believed that alcohol would gradually fall into disuse in medicine, but until all question concerning its effects had been definitely settled, physicians should be very careful as to the use of alcohol and should resort to other drugs recognized as substitutes.

Dr. Henry O. Marcy, Boston, moved a vote of thanks to the alliance committee and spoke of the work done by the American Association for the Study and Prevention of Inebriety.

Annual Dinner.

On Thursday evening, about five hundred guests sat down to the annual banquet of the association, over which the president of the association presided. Toasts were responded to by the lieutenant-governor, Sir James Grant, Montreal, who spoke for the Parliament, and by E. B. Osler, M.P. Prof. Goldwin Smith spoke to the toast of the British Medical Association. He sketched briefly the progress of modern medical science, the development of hospitals, the training of nurses, etc., and charged the association to guard its privileges, "for they are not the privileges of your profession alone but the safeguard of society against empirical murder." He closed with a tribute of hospitality and greeting. Sir William Broadbent and Dr. MacDonald, Toronto, responded for the association. Sir William Hingston proposed the health of the guests. A few brief remarks in reply were made by Prof. Dr. Aschoff, for Germany, Dr. Lapicque for France, Dr. Frederick W. Mott for England, and Dr. W. J. Mayo, representing the American medical profession.

(To be Continued.)

Miscellany

Advertisers and the Gullible.—The Dutch member of the newly founded International Antiquackery Association, van Elk, tells the story that an advertisement appeared in the papers stating that for 75 cents a powder would be sent which, if scattered on the waters of a stream or pond, would stock it with edible fish. A man sent the 75 cents for the powder, but his money was returned to him with the statement that the advertisement was inserted on a wager that no paper would accept such a nonsensical advertisement and that no one would be found foolish enough to respond to it if published. The letter added that the applicant was not the only one; he had been preceded by 256 others.

Experimental Arteriosclerosis and Iodin.—According to an item in the *Med. Klinik* for April 29, Koranyi recently reported at a scientific meeting at Budapest that he had been able to control arteriosclerosis. He injected 17 rabbits at two-day intervals with 0.15 c.c. of a standard preparation of suprarenal extract. A small amount of a preparation of iodin was injected at the same time, also intravenously. After about 9 injections the animals were killed. In 8 of the 9 animals who had not been injected with iodin changes were found in the aorta characteristic of the "adrenalin arteriosclerosis" first described by Josué. Only one of the animals was sound in this respect, while of the animals treated with iodin, 6 were sound, and merely slight evidences of the arteriosclerosis were found in the 2 others. It seems evident from this research that iodin has a favorable influence on the arteries, modifying the great fluctuations of the blood pressure which are probably the principal factor in the experimental arteriosclerosis.

Auto-Narcosis for the Wounded and Others in Severe Pain.—We learn that Prof. C. L. Schleich of Berlin has recently published a pamphlet entitled "Auto-narcosis for the Wounded in War and Peace"—"Die Selbstnarkose der Verwundeten in Krieg und Frieden." It describes a little contrivance which he thinks may prove very useful. A small aluminum case holds three small bottles, each containing a long cotton wad fastened to the cork and impregnated with 50 gm. of his anesthetic mixture. This consists of 2 parts ethyl chlorid, 4 parts chloroform and 12 parts ether, the whole having a boiling point at 38 C., the fumes thus being of the same tension as the air in the lungs. The stopper is drawn from one of the bottles and the fumes inhaled. Analgesia is immediate and is followed by profound sleep. He believes that this harmless method of auto-anesthesia or its equivalent is destined to supplant morphin hypodermics. The appliances should be kept on hand in mines, factories and elsewhere, and the anesthetic be given before transporting the wounded persons.

Photographing the Dead for Identification.—The London *Lancet* for May 5 states that the coroner at two recent inquests commented on the unsatisfactory character of the photographs of the unidentified dead taken by the police authorities. It adds that Dr. Minovici has contributed a valuable communication to this subject from his experience as director of the Medicolegal Institute of Bucharest. He describes his methods in an article published in the *Archives d'Anthropologie Criminelle* for Nov. 15, 1904. He substitutes artificial eyes, and gives a natural appearance to the lids by means of lead foil or by pinning them with a fine pin to the eyeball. The jaws are drawn together with threads, and the face drawn to a natural expression by an arrangement of pins, evacuating accumulations of gases by incision in the scalp or mouth. He gives photographs of the various steps of this preparation of the corpse for photography, and states that by this means he was successful in one case in which the body had been immersed in water for six weeks, the identity being finally established by the photograph.

Injurious Influence of Night Work on the Composition of the Blood.—Gardenghi has been conducting research which apparently shows that light is as indispensable to human beings as to plants for normal growth and development. There seems to be a deficiency in the assimilation of iron under the influence of the lack of daylight, with consequent deficient formation of hemoglobin. Light seems to be required for normal production of hemoglobin the same as for the production of chlorophyll in plants. He presented the conclusions of his research at the recent International Congress for Professional Affections at Milan, dwelling especially on the harmfulness of night work. Long series of examinations of bakers at Parma, his home, showed that while the proportions of the blood corpuscles were about normal, the percentage of hemoglobin was very much below par in those who worked exclusively during the night. His article is reproduced in German in the *Wien. klin.-therap. Wochschr.*, xiii, 697.

Quackery.—In the address to the graduates at Edinburgh university, an abstract of which appears in the *Medical Press*, August 8, Thomas Annandale, professor of surgery, said that two theories have been suggested to explain why primitive man first had recourse to internal remedies for the cure of disease, the one being that it was accidental and the other that it was in imitation of the lower animals. He referred to Pliny's account of the origin of venesection that the hippopotamus, having become too fat and unwieldly through overeating, thrust his nose against a sharp-pointed reed, and when he had drawn sufficient blood closed the wound with clay. He said that probably the first special treatment of disease was due to the Egyptians or Chaldeans; from them the Greeks obtained their knowledge, and Cheiron was the first to instruct his countrymen, among them Esculapius, who is credited with being the originator of medicine as a distinct profession. Between the days Esculapius, who flourished in 1200 B.C., and those of Hippocrates, 400 years later, medicine and myth are inextricably intermingled; the practice of the art seems to have been in the hands of a priesthood, who worshiped in temples devoted to Esculapius as the god of physic. With the writings of Hippocrates a new era dawned, for they show a marvelous knowledge of injuries and disease and contain methods of treatment founded on sound principles. As knowledge and civilization advanced, although improvements in the art of medicine took place, quackery continued rampant. The credulity which the study of quackery discovers almost approaches monomania or insanity. This credulity is explained by the fact that in all times there have been men and women of strong personalities and unlimited self-assertion who dominate their fellow creatures and exercise a power for evil as well as good, and it is also explained by the natural tendency of a patient with a chronic illness to seek help from any source. He mentioned the exponents of quackery in the past. There was Buley, for instance, in the days of Edward VI, who gave roasted rats as remedies to sick children; touching for the king's evil, which attained its height in the reign of Charles II; the quack oculists of Queen Anne, who suffered from weak eyes and was treated by William Reade, a tailor, and Roger Grant, a cobbler and Anabaptist preacher. Mesmer flourished in 1776, and a commission of the French Academy of Science was deputed by the king to investigate his claims. Among noted quacks of the past, Annandale said, were Katterfelto, who wandered through the country with a caravan full of black cats and was finally condemned as a vagabond by the mayor of Shrewsbury; a Dr. Graham, who sold an elixir of life to any one who would pay him $5,000 for it, and conducted a Temple of Health, in which Lady Hamilton, Lord Nelson's goddess, took part in musical performances. Again, there was the fat, ugly, tippling Mrs. Mapp, with her carriage and four, who was esteemed as a bone-setter and known popularly as "Crazy Sally of Epsom." A very notorious quack was St. John Long, son of an Irish basketmaker, who acquired fame as a healer. His house in Harley Street was flocked to by the rank and fashion of the day, who were treated by inhaling some mixture through a tube. The street was often blocked by his patients' carriages; he was received into the best society; it is said that he made $67,000 in one year. He ended by being tried for manslaughter at the Old Bailey, but escaped with a fine of $1,250. Faith cures and cures acting on the imagination have thus flourished from very early times, Annandale said, and more recently a faith cure under the name of Christian Science has sprung up. In this history is repeating itself. In ancient and more modern days so-called faith cures have been carried out by the aid of ceremonies and incantations and the erection of temples to aid the imagination.

According to what we read and hear, Eddyites are following in the same footsteps. If they aid in promoting temperance in alcohol and tobacco they will do good, but if they profess to cure disease by their methods or to assert that there is no such thing as real pain, then we are justified in calling them quacks. How can quackery be checked? In the first place, medical men must not practice quackery themselves, for it is too true that it exists inside as well as outside of the profession. Then it is important to individualize in treatment, so that patients may reap the greatest benefit, while careful and accurate diagnosis and prognosis will help to guard against disappointment. In Great Britain, he said, there is no legislation against quackery. The government receives $1,500,000 annually from the licenses and stamp duties on the sale of "patent medicines." Many "patent medicines" in no way comply with the law requiring that they must be genuine original inventions, and that a complete description of them must be filed at the patent office. In both France and Germany there is at present a great deal of agitation in favor of greater stringency in dealing with quackery and stricter supervision of proprietary remedies. In conclusion he said that it is important to realize the responsibilities resting on those entering on the practice of medicine, both in exercising the sympathetic faculty and in cultivating friendly intercourse with patients of all classes.

The Choice of a Holiday.—The summer holiday is usually believed to be a season for recuperation and for renovation, says the *Medical Press;* a time when the jaded tissues are able to cast off effete products of over-activity, and to lay in a store of energy for the coming months. If the holiday is to be this, and not a mere new-sensation-hunting performance, the choice of the place in which it is to be passed is of great importance. To go to a seaside town or a mountainous district simply because a friend has gone thither and liked it, is not to plan one's holiday scientifically; which is another way of saying that for a holiday to do one good, the selection of the place where it is to be passed must be determined by the necessities and conditions of the individual. To many delicate women strong breezes and bracing air cause exhaustion and prostration, while, again, the relaxing atmosphere of some sheltered resorts sends the young and vigorous home but little the better for the trip. Especially needful is the exercise of care in advising old people as to their change. To send elderly and overworked men to the high altitudes is to cause them some not inconsiderable danger of apoplexy, and if they are asthmatic or subject to chronic bronchitis the rarified air of high mountains may cause ruinous damage to lungs and heart. Climatology as an exact science is yet in its infancy, but it is sufficiently advanced for a well-educated medical man to be able to advise wisely on the choice of a holiday resort, and people generally would do well to consult their professional attendant before booking rooms a month or six weeks ahead.

Travel Notes

(Continued from page 812.)

DISEASES AND HOSPITALS OF PORTUGUESE EAST AFRICA.

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CHICAGO.

Portugal has a claim on Africa by the right of discovery, and in the apportionment of the country by the great powers of Europe she has held her own and her flag floats in the breeze of both coasts. Her possession on the east coast consists of a long, narrow strip of land, extending from German East Africa southward to Tongoland and including the Island of Mozambique. The country is only thinly settled, owing to the prevalence of malaria, which makes it dangerous for Europeans to make their homes anywhere on the vast stretch of lowlands, where the soil is most productive. The Portuguese have to contend here, like their neighbors, the Germans, with all kinds of tropical diseases, notably malaria and dysentery.

MOZAMBIQUE.

Boys who study geography are sure to preserve the names of certain places, cities, rivers, capes, islands, etc., in their memory long after they have forgotten the exact boundaries of familiar states and countries and the length and course of well-known rivers. The names that have clung to me ever since I left the hard benches of the country schoolhouse were Tahiti, Zanzibar and Mozambique. I have now seen all of these places and none of them has presented the aspects which would correspond with the mental picture that I had drawn of them. Of these historic and interesting islands, Mozambique was the most disappointing. I had dreamed of a larger island with volcanic mountains and valleys green with luxuriant tropic vegetation, noble wild animals, birds of plumage, monkeys traveling over land by leaping from tree to tree, using their long mobile tails as an additional and most important prehensile limb; a very ancient city, with streets so narrow that two persons would find it difficult to walk abreast. Imagine my surprise when we sighted an island in the small Mokambo Bay, almost filling the same and only three miles long and on an average not more than three-quarters of a mile wide, flat and sandy, a little oasis in the Indian Ocean, hugging the mainland closely, as if in fear of being engulfed by the sea, with here and there a timid palm raising its feathery crown above the plain, square, white, two- and one-story flat-roofed houses. As we came nearer a fleet of East Indian dhous was seen anchored in front of the landing-place, as well as a small gunboat with four guns, flying the Portuguese flag. The official inspection by the health officer and the custom-house officials

Military and Civil Hospital Mozambique.

was over in a short time, and we at once went ashore in a rowboat to utilize the few hours to the best advantage in seeing the sights of the city. Our haste proved useless, as there was not much to be seen. There are neither horses nor any kind of traction or riding animals in the city, and the only conveyance obtainable for those who can not or are not willing to walk is a jinrikisha. The blacks here make as good jinrikisha men as the Japanese, who are experts in this kind of getting about.

Mozambique, a city of 7,000 to 8,000 inhabitants, has no hotel and no regular restaurants. The city has many wine-houses, but has made no satisfactory provisions for the hungry stranger, who is glad to return to his ship when mealtime comes. The streets are in excellent condition, but sidewalks are either very narrow or entirely wanting. A few little parks with scrubby, hardy shade-trees relieve the eyes, which everywhere else see nothing but sand. Trees and flowers show by their puny appearance their burning thirst for water. All the shops are small, containing only what the people most need. The blacks here are very independent in their bearing, showing very plainly that they have the upper hand in the management of the affairs of the city. The small military force stationed here, as well as the police, is made up exclusively of blacks under the command of white officers. We visited the market and saw what is brought over from the nearby

mainland and what the sea furnishes. Several negro women, the most ugly and vicious-looking that we have seen so far, who were selling palm wine, did the best business. The wine in large earthen jars was still fermenting and bubbling. Two cents bought a gourdbowlful, holding about a quart. Two such doses make the black happy for the balance of the day. The behavior of the Amazons who dispensed this stuff was enough to show that they had done their share in emptying their vessels. We tasted this palm toddy. It was cool and pleasant to the taste, slightly sour and had some of the pungency of dry champagne. There were fish, fresh and fried, bananas, thin, narrow strips of bread fresh from the stove, served hot on banana leaves, cocoanuts, papaya, manihot roots, raw and boiled, several kinds of capsicum, small bundles of split firewood, etc., all articles for which only the natives have use. What little is left of the island outside of the city is a sandy desert.

The sight that I presume every visitor who lands here goes to see is the old fort of St. Sebastian. It is this ancient fort, with its grim, high walls blackened with age, which is seen first when the city comes in view. The building of this fort dates to the time of Da Gama, when he sailed along the east coast of Africa in search of a new waterway to East India. The fort is built on a narrow spit of the island, covering its entire width, and the thick, solid walls rise from the sea on three sides. It is kept in good repair and now serves as a barrack for the soldiers. The walls rise high above the inner even court, where the black soldiers are drilled in the art of war. On the top of the rampart facing the sea the portholes are occupied by ancient cannons of prodigious size, mounted on carriages with rickety wooden wheels. These fearful engines of war probably have never spoken, but were ready centuries ago to spit fire and destruction had any foreign power made an attempt to gain possession of the little island. This ancient citadel, with its historic guns, would be helpless against a single modern battleship, but it has been respected in the past, and may well be proud to have outlived other more formidable strongholds over which the flag of many a conqueror has floated since their foundations were laid. The veteran fortress shows only one scar, and that was made by an accidental explosion of dynamite and is now being repaired with the utmost care.

The Roman Catholic church rules here supreme. The cathedral is a very modest church and the other two churches show no greater pretensions. The church has been prudent in the expenditure of money. Schools had to be erected and maintained. In the yard of one of these schools we saw the black children at play after the morning lessons were over, and they were indeed a cheerful, happy lot.

Portuguese and natives live on the best of terms throughout this possession. There is no conflict nor even manifest dissatisfaction here. The government treats its black subjects leniently and with much consideration. Experience has shown that the negro can be led, but not forced, to do a thing which comes in conflict with his own ideas of right and justice; he is a lamb when led, a mule when forced. Only two Germans and nine Englishmen live in the city and only a very few East Indians and Arabs. Mozambique has its own postage stamps, and the money in circulation is coined for Portuguese East Africa.

MOZAMBIQUE MILITARY AND CIVIL HOSPITAL.

I have never been in a colony or protectorate where the native sick are treated with so much consideration and are taken care of so well as in Portuguese East Africa. The colony has no separate hospitals for Europeans, as in British and in German East Africa, but white and black live under the same roof and receive the same care. We miss here the superb, costly buildings set aside exclusively for the care of Europeans, such as I have described in speaking of British East Africa and German East Africa. Of all nations owning or protecting foreign lands, Portugal has had the longest experience and has learned how to treat alien subjects without causing friction. The sentiments of the people are considered in formulating rules for their government. Perhaps the most important secret of Portuguese peaceful colonial rule is found in the fact that the line of division between the officers and the people of the home government and the blacks is not as sharply drawn as in the colonies of other nations. It is the conspicuous preference given to the whites that stings the blacks, the rightful owners of the soil. The Portuguese have learned this by a long experience and shape their rules accordingly.

I can give no more striking example of Portugal's lenient foreign policy than by a brief description of the Mozambique Military and Civil Hospital, which answers to the construction and administration of every other government hospital in Portuguese East Africa, of which there are several. In the first place, these hospitals are built and, at least in part, maintained by the government, and are in charge of Portuguese military surgeons, especially trained for their manifold functions. In the second place, the sick in the colony, white and black, officers, government officials, soldiers, policemen, rich and poor, educated and ignorant, old and young, men, women and children, are under the same administration. While the whites are given preferences, these do not stand out in the eyes of the natives in such sharp lines as in the hospitals of most of the other colonies. The same doctor who treats the whites attends to the blacks; the same sisters who nurse the Europeans take care of the natives. The difference, if any, is in degree, not in kind, and it is considerations like these that the negro knows how to appreciate.

The hospital was built twenty-five years ago, and at that time it would have compared well with most of the hospitals of Europe and America in construction and equipment. Its architecture is decidedly Spanish in style. Like all other substantial houses on the coast of Africa, it is built of rough stones of coral rock, with a heavy inside and outside coating of cement. The two main buildings are two stories high and serve for private rooms of patients of the first class, small wards for the second class, directors' apartments, pharmacy, storerooms, chapel and dormitory for the sisters. The large wards for patients of the third class and all charity cases are in one-story pavilions, the blacks in separate wards. The first-class patients pay $2 per day, the second-class 75 cents and the third-class 25 cents. Light and air flood every room of the handsome, well-arranged complex of buildings, which on one side face the principal street of the city and park and on the other the harbor. As the city of Mozambique must rely on rain for its water supply, each house has its own cistern. The hospital has two immense underground cisterns, with a total capacity of 600,000 tons, which furnish an abundance of pure, cool drinking water. These cisterns are located between the pavilions. The spaces between the main buildings and the wings are paved with flat stones and are kept as clean as the mosaic tile floors in the interior of the buildings. The hospital has 200 beds, and during the rainy season, when malaria is most prevalent, its full capacity is heavily taxed, but at the present time the number of patients is only eighty. The pharmacy is in charge of a competent druggist and is well stocked, and the two large storerooms are well supplied with medicines, dressing materials, bedding, etc. The operating room is small but well constructed and equipped for modern surgical work. Very little surgery is done here, as in all other East African hospitals, on an average not more than two operations a day, and most of these are minor operations. A Roentgen apparatus has recently arrived and will be put in operation as soon as electric power can be secured, and then it will be the first one to be employed on the East Coast of Africa. Dr. Francisco Maria do Amaral is the director of the hospital and is assisted by three other military surgeons. He speaks English fluently and has kept pace with the modern progress in medicine and surgery. He took great pains in explaining the details of the hospital work and in showing the interesting cases then under treatment.

Eight Catholic sisters have charge of the nursing and they are assisted by orderlies and native helpers. The average number of patients during the year is about 2,000. The patients come from all parts of the province of Mozambique. Dr. Amaral has been stationed here for a long time and has never seen a case either of carcinoma or appendicitis in the black. The same holds true of the Eskimos of the far north, as I

ascertained last summer when I went to Etah, the most northern habitation of man. It seems, then, from the geographical limits of these diseases that civilization with its complicated dietetics is responsible, to a large extent, for their prevalence in Europe and the United States.

DISEASES OF THE PROVINCE OF MOZAMBIQUE.

From information obtained from Dr. Amaral and from scanning over the last report of the Service of Health (*Relatorio de Servico de Saude do Provincia de Mozambique Estatistica Hospitallare Anno 1904*) for 1904, a government publication replete with painstaking, accurate statistics, I gained a fair insight into the prevailing diseases of this part of Portuguese colonial Africa. I have already mentioned that Dr. Amaral had never seen during his long residence here a case of carcinoma or of inflammatory disease of the appendix in the negro. There is a little laboratory in the hospital where bacteriologic studies are made and pathologic specimens are examined microscopically, so that we have reason to believe that these diseases were not overlooked. In the report I find, under the head of "Cancer and other Malignant Tumors," three deaths reported from Lorenzo Marques, one of which was from sarcoma of the breast, one from intestinal neoplasm, and in one, a negro, 17 years of age, the cause of death is given as cancer of the pancreas, the diagnosis having been confirmed by autopsy.

TOTAL MORTALITY.

The total mortality of the province for the year was 1,222. Of this number there were 202 Europeans, 125 Asiatics, 892 Africans and 4 white Americans. The list includes 6 intrauterine deaths, 973 males and 249 females, and of these 500 died in different hospitals and 722 outside of the hospitals.

HOSPITALS.

The nine hospitals of the province are located at Lorenzo Marques, Mozambique, Quelimane, Imhambane, Chinde, Chibuto, Angoche, Tete and Mossuril. The total number of patients treated in these hospitals for the year was 9,055, of which 4,141 were military and 4,914 civil; 8,213 males and 822 females. Of this large number of hospital cases there were only forty-two children below the age of 5 years, a figure showing again and most conclusively that the blacks have little use for hospitals in the care of their sick children.

In visiting the hospitals of the coast I was struck by the small number of children under treatment. Most of the children I saw were not ill, but accompanied their sick mothers.

MALARIA.

Malaria here, as well as everywhere else on the coast, is the prevailing disease, and the patients suffering from this disease fill the hospitals to overflowing during the rainy season. In the nine hospitals 3,661 cases, or more than one-third of the whole number of patients, were treated for malaria, with eighty-three deaths, the mortality varying with the hospital, being lowest at Chibuto, 1.2 per cent., and highest at Chinde, 6.3 per cent. Malarial diseases are classified as follows:

	Number of Cases.	Deaths.	Percentage.
Intermittent fever	3,577	1	0.03
Remittent fever	19	1	5.3
Pernicious fever	39	26	66.6
Bilious fever	171	43	25.1
Malarial cachexia	175	12	6.9

Among the malarial patients the whites figure largely in excess of the blacks, their total number being 3,175, with 67 of the total number of 83 deaths. Next to the whites the half-castes suffer most frequently from the grave forms of malaria and contribute most to the mortality list.

TREATMENT OF MALARIA BY SUBCUTANEOUS INJECTIONS OF QUININ.

Dr. Amaral is very partial to this method of treatment in all grave forms of malaria. The preparation he uses is a solution of half a gram of quinin, kept ready for instantaneous use in a glass capsule drawn out on opposite sides and sealed by heating the ends. The hypodermic needle is charged by breaking off one of the ends, when the fluid is aspirated directly from the capsule and is at once injected under strictest aseptic precautions. If the case is severe he makes the injections morning and evening until the disease is under control. This way of administering quinin would seem to recommend itself in all grave cases, more especially in military practice.

SMALLPOX.

This disease appears to visit the colony almost every year, but on the whole is on the decline. Only 118 cases were observed during the year, of which the disease proved fatal in six. During the year, 4,590 persons were vaccinated, and of this large number there were only 32 whites and an equal number of half-castes. At Quelimane alone 2,162 negroes were vaccinated.

DYSENTERY.

During the whole of the year, 224 cases of this disease entered the hospital for treatment. Of this number 98 died, a very large mortality. Of the 83 whites, only 8 died, showing that the mortality from the disease is greater among the blacks than the whites, probably in consequence of neglect and improper diet, as well as for the reason that they do not apply for treatment in time. The disease is more frequent in the country than the cities, and its greater prevalence there is attributed by the physicians to the drinking of polluted water and the eating of improper food.

TUBERCULOSIS.

Pulmonary tuberculosis is on the increase on the coast where the blacks are brought in contact with the Europeans. The number of deaths from this disease in the province of Mozambique for 1904 was 185, divided among the different nationalities as follows: Europeans, 24; Asiatics, 26; Africans, 34, and 1 American. Here for the first time I found mention in the reports of cold abscesses and general tuberculosis occurring in the natives on the coast.

SYPHILIS AND VENEREAL DISEASES.

The presence of venereal diseases is well shown in the following table for the year 1904:

	Men.	Women.	Total.
Syphilis	334	106	440
Soft chancre	171	48	219
Gonorrhea	186	240	426

This table gives by no means the whole number of venereal diseases, as many of the blacks, especially the women, do not apply for treatment.

PNEUMONIA.

This disease is very fatal. Of the 40 cases treated in the hospitals, 18 died, a mortality of 45 per cent.

DISEASES OF DIGESTIVE ORGANS.

These diseases are grouped together under the head of diarrhea and enteritis. The total number is given at 178, which, of course, included only the grave cases. Of this number 67 were Europeans, with 5 deaths. Of 321 cases of disease of the stomach none resulted in death.

SLEEPING DISEASE.

This disease has never been known to originate in the city of Mozambique. Two deaths from it are recorded in the report. One of the patients was a native soldier, who contracted the disease on the coast; the other was a negro, who came affected with the disease from Angola, Portuguese West Africa.

LEPROSY.

The number of lepers is given at 30, distributed over the province as follows: Lorenzo Marques, 19; Mozambique, 1; Inhambane, 9, and Tete, 1. Lepers are not admitted into any of the hospitals. Dr. Amaral has recommended to the government the establishment of a home for these unfortunates, who are now entirely neglected and have to depend on their relatives and friends for support and care.

DISEASES OF THE SPLEEN.

Considering the prevalence of malaria in the province, the number of cases of enlargement of the spleen, as given in the report, is remarkably small, only 29; of these, 24 were whites, 1 yellow and 4 blacks. The negroes are very resistant to chronic malarial poisoning and are very rarely affected with enlargement of the spleen as compared with the whites.

BERIBERI.

This disease was observed 18 times during the year. Lorenzo Marques furnished 15 cases, Mozambique 1 and Chile 2. Of this number, 5 died.

RHEUMATISM.

Of this disease there are recorded 370 cases, 230 acute and 120 chronic, with a mortality of 4, 2 from the acute and 2 from the chronic form of the disease.

We miss in this enumeration of diseases carcinoma, with the exception, perhaps, of a doubtful case, also appendicitis and typhoid fever. Strangely enough, typhoid fever has not as yet gained a foothold on the soil of the east coast of Africa, although the sanitary conditions in many places are such as would seem favorable to the growth and spread of the bacillus of the disease. Neither is there mention made of the most common diseases of childhood: measles, diphtheria, scarlatina and whooping-cough. Twelve cases of cerebrospinal meningitis were observed, with a mortality of 5. Considering the severity of the climate, the prevalence of malaria and its many complications and the doubtful water supply of the people living in the interior, the general mortality could not be called excessive. The national vice of laziness and the absence of manufacturing establishments of any importance account for the small number of injuries, only 449 cases.

BEIRA.

Beira, at the mouth of the Pungwe River and a short distance south from the delta of the great Zambesi River, is the most important port of Portuguese East Africa. The little city is located on a narrow, sandy strip of land between the mouth of the Pungwe River, which serves as an excellent harbor, and Mazangzani Bay. The terminus of the Rhodesia Railroad here adds much to the commercial and shipping importance of the city. Most of the houses are solid two-story brick and cement buildings, with tile or corrugated iron roofs. There are only two or three horse vehicles here. The principal street bisects the city and has in the middle a narrow-gauge track of the man trolley cars, a great convenience for getting about the far-spun-out city and for the transfer of freight. Most of the professional and business men have their own private car and their own man to push it. Two persons can sit comfortably side by side, and in case of need a third can be sandwiched in between. There are only a few short sidewalks in the city, so that most of the walking must be done by wading ankle-deep in the loose, hot sand. At the time of our visit the heat was very oppressive. There are a few large stores, in which almost everything is kept which is most needed, but at prices which stun the visitor. Among the several hotels the Savoy and Queen's Hotel are the best. The table of the former, for such a place as this, is excellent, and the rooms are large and airy. A bank, several steamship offices and the railway office handle the bulk of the money. The prison, in the heart of the business part of the city, is a most unique building. It is small and has all the appearances of a neat chapel if it were not for the strong iron bars of the high, narrow and numerous windows. The city is only ten years old. The next city on the coast south from here, Sofula, was for several hundred years the port. The good harbor here made it necessary to transfer business and shipping to this place. A few kinds of hardy trees, cocoa palms, eucalyptus, acacia, wild almond, etc., have been planted and seem to thrive in this dry, hot, sandy soil. Most of the natives are kaffirs, black as coal and fine specimens of physical development and muscular strength. Most of the laborers wore nothing but a loin cloth, and this in most instances was none too wide.

Beira has an unenviable reputation as a fever nest. Mr. Bryce, who visited this place before the railroad was completed, made the statement that no white man could remain three consecutive days anywhere between Beira and the inland mountain plateau and escape an attack of fever. All the white people who have lived here for several years have had their good share of malaria. I examined a number of negro children and they all had the prominent abdomen seen in children living in malarial districts, and in all of them the enlarged spleen could be felt several inches below the costal arch. All the white women I saw were pale, emaciated and evidently much enfeebled, as was shown by their drawn faces and languid walk. Their little children were in the same condition. Several of the sisters in the hospital were very anemic, poor in flesh and none too strong for the arduous duties in care of the sick in their charge.

Beira is one of the hottest places on the coast. The hottest months are December and January. At this time the thermometer not infrequently registers 120 F. in the shade, and I was told that eggs placed on the hot sand and exposed to the burning rays of the sun were cooked hard in a short time. Throughout the year it is disagreeably warm from 10 o'clock in the morning until 4 in the afternoon, and during this time the people remain in their houses and very little work, if any, is done. Even the postoffice officials have their midday siesta. The mealtimes are so arranged that they do not interfere with the working hours. The first plain breakfast early in the morning is followed by a second one at 11:30 a. m., which is a substantial meal. Dinner is served late in the evening.

BEIRA GOVERNMENT HOSPITAL.

Beira has only one hospital, which was built and is maintained at government expense. It is beautifully located in park-like grounds and faces the principal street on one side and on the other side the bay. The hospital was built ten years ago at a cost of $25,000 and has room for sixty patients. At present, the coolest and healthiest season of the year, the number of patients does not exceed thirty, and most of these are suffering from malaria. The government physician, Dr. José Aranjo de Lacerda, is in charge of the hospital and the nursing is under the care of five Sisters of St. Francis. The hospital consists of two one-story brick and cement barracks, one for the whites and the other for the blacks. The cots in the latter building are the narrowest I have ever seen, hardly eighteen inches in width. The framework is made of iron bars, on which a piece of canvas is stretched. Each cot is supplied with two white sheets and a pillow, and the patients on these, the narrowest of all beds, appeared to be comfortable. Simple and plain as these beds are, they must seem a luxury to the blacks, who know no softer bed than a mat on the bare ground. In the cottage for the whites are a number of plainly furnished but very comfortable private rooms, for which a charge of $5 a day is made. In the little wards the second-class patients pay $1 a day. Few of the negroes are able to pay anything, and as this class of patients during the year is large they become a heavy tax on the financial resources of the hospital.

I saw and examined here patients suffering from malaria in all its multitudinous forms. In the acute form the temperature curves were nearly the same in all cases. A chill, followed by a temperature of 40.8 C., then under quinin treatment a speedy fall to normal. Dr. Lacerda, like Dr. Amaral, relies largely on the subcutaneous use of quinin in doses of seven and one-half to fifteen grains, administered once or twice during twenty-four hours. In some cases quinin is given at the same time by the mouth, and to prevent its being ejected by vomiting it is mixed with pulverized gentian. If, as is often the case, a light icterus makes its appearance, three grains of calomel are given, followed by a saline cathartic. In the beginning of the attack evaporating camphorated lotions are employed to reduce the high temperature, and phenacetin is given to relieve the intense headache. In chronic cases arsenic is frequently used in combination with quinin. In the pernicious form of malaria the system is saturated as quickly as possible with quinin, given subcutaneously and by the stomach, so that the patient receives at least forty-five grains during the first twenty-four hours. One case of blackwater fever was under treatment and well on the way to recovery. Beside malaria, I found in the ward for the natives a case of advanced pulmonary tuberculosis, parenchymatous mammitis in a syphilitic woman, tropical abscess in a boy about 12 years old and a case of chronic dysentery. In front of this ward we saw squatting on the sand an old negro, a mere skeleton, evidently the subject of some mental derangement. He refused to eat rice, meat and other nutritious articles of the hospital diet, but made his evening meal of black coffee and a piece of bread, which he tore in pieces and

moistened in the black fluid. Dr. Lacerda has never seen a case of carcinoma or appendicitis in the negro, and believes that these diseases do not affect the race. Typhoid fever is unknown here.

The drinking water is obtained from a subterranean cement cistern, in which the rainwater is collected. For other purposes the water is obtained from a well on the hospital grounds. The sisters live in a separate building. In another completely detached small building are the bathrooms and closets. The wash-house is in an open shed, in which there are a number of large cement tubs, in which the native employés do the washing by hand in the customary primitive way. Provision for postmortem is made in a small morgue, where two large slab tables were waiting for the next victims, who will not be long in coming. The hospital has a large dressing-room, where the outdoor patients are attended to and where the few operations are performed, as there is no room set aside for this special purpose. Dr. Lacerda said that during the year not more than two capital operations are performed. From all I have seen the east coast of Africa is no place for surgery. The physician who has a thorough knowledge of malaria and its treatment, and is well-grounded in the diagnosis of syphilitic affections and the rational use of mercury and potassic iodid, and who can treat most successfully blennorrhea without leaving any of its many complications, is the man most needed, and he will meet with the greatest success financially, and in gaining a permanent and widespread reputation, for malaria and syphilis are the white pests of the coast.

(To be Continued.)

State Boards of Registration

COMING EXAMINATIONS.

WYOMING State Board of Medical Examiners, State Capitol, Cheyenne, September 5. Secretary, S. B. Miller, Laramie.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 11-13. Secretary, J. F. Kennedy, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Connecticut July Report.—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 10-11, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 76. The total number of candidates examined was 37, of whom 28 passed and 9 failed. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent.
Yale University	(1905) 81; (1906) 78, 83.2, 85.2	
University of Maryland	(1906)	77.5
Johns Hopkins Med. School	(1906)	86.8
Baltimore Med. Coll.	(1906) 75.2, 76.8, 78.4	
College of P. and S., Baltimore	(1906) 76.6, 82.1	
Harvard University Med. School	(1896) 81.7, 86.2	
Dartmouth Med. Coll.	(1905)	75.4
Cornell University	(1906)	81.2
Long Island Coll. Hosp.	(1906)	83.1
University and Bellevue Hosp. Med. Coll., (1896) 76.4; (1906) 83.2		
College of P. and S., New York, (1904) 84.1, (1905) 85; (1906) 85.3, 85.4.		
Jefferson Medical College	(1906) 81.3, 82.6, 84.1	
University of Pennsylvania	(1904)	76.7
McGill University, Canada	(1906)	78.6
University of Vienna	(1902)	82.1
FAILED.		
College of P. and S., Chicago	(1905)	71.9
Maryland Med. College	(1897)	74
Baltimore Med. Coll.	(1906)	70.8
College of P. and S., Baltimore	(1906) 72.8, 73.9	
Tufts Med. Coll.	(1905)	69.3
Jefferson Med. Coll.	(1906)	71.5
University of the South	(1905)	71
College of P. and S., Boston	(1906)	52.1

The following questions were asked:

PRACTICE, PATHOLOGY AND DIAGNOSIS.

1. Etiology, symptoms and treatment of cholera infantum. 2. Contrast the symptoms of exophthalmic goiter and myxedema. 3. Give the symptoms and pathology of each of the three stages in acute lobar pneumonia. 4. Differentiate between scarlatina, rubeola and rubella: (a) Length of period of incubation of each. (b) Symptoms of the stages of: 1. Invasion; 2, eruption; 3, desquamation. (c) Principal complications and sequelæ. 5. Give the changes in the blood of pernicious anemia. 6. State the point of greatest intensity and direction of transmission of the following heart murmurs: (a) Aortic diastolic. (b) Mitral systolic. 7. Causes of pulmonary edema. 8. Causes of infantile convulsions. 9. Define aphasia and give its different forms and the seat of the lesion of each. 10. Treatment of eczema both constitutional and local.

PHYSIOLOGY.

1. Describe the red blood corpuscles, (a) as to origin and fate, (b) form, (c) size, (d) number, (e) function. 2. What are the agents concerned in the circulation of the blood? 3. Describe normal pulmonary sounds. 4. Define primary anemia, and how is it distinguished from that known as secondary? 5. What and where are Brunner's glands? (b) Peyer's patches? (c) The functions of each? 6. What are the influences necessary to increased urinary secretion? (b) What is the most important ingredient in urine, and what does it represent? 7. State the function of: (a) the vas deferens, (b) the vesiculæ seminales, (c) the prostate gland. 8. Classify nervous functions. (b) What are reflex centers? (c) What are automatic centers? 9. Through what channels and by what processes are the end products of digestion conveyed to the blood? 10. Discuss the characteristic features of the fetal circulation, (a) ductus venosus, (b) ductus arteriosus, (c) the foramen ovale, (d) the hypogastric arteries, (e) the umbilical vein.

MATERIA MEDICA AND THERAPEUTICS.

1. What is the physiologic action of cocain? 2. What are the symptoms of iodism, and how prevented while continuing the drug? 3. Contrast the action of belladonna and opium. Give the treatment of acute nephritis. 5. Name the different preparations of mercury and their doses. 6. Name three drugs whose action differs in promoting diuresis. Give an example of each. 7. Give the treatment of the following intestinal parasites: (1) *Tænia solium*, (2) *Tænia bothriocephalus*, (3) *Oxyuris vermicularis*. 8. What are the therapeutic uses of aconite? 9. Therapeutic uses of compound jalap powder, its composition and doses. 10. Physiologic action of jaborandi; its therapeutic uses.

ANATOMY.

1. Describe the differences between the sacrum of the male and that of the female. 2. Give the minute anatomy of the skin. 3. What veins return the blood from the head and face? 4. Give a general outline of the trifacial nerve, mentioning its principal subdivisions: make open drawing. 5. Describe the tongue, (a) structure, (b) muscular connections, (c) nerve supply, (d) blood supply. 6. What are the valvulæ conniventes and how are they formed? 7. What is a femoral hernia? Mention the covering of the same from without, inward. 8. Give the relations of the heart to adjacent organs and tissues. 9. Describe the pancreas. 10. What is the abdomen? Describe its boundaries, its regions and parts included in each. Make a sketch.

OBSTETRICS AND GYNECOLOGY.

1. Define and give the pathology of: (a) Pelvic hematocele; (b) pelvic hematoma. Give treatment for each. 2. What are the factors in the production of pyelitis in pregnancy? At what time does it occur, and which kidney is more often involved? 3. Is the eclampsia in pregnancy due to renal or extrarenal conditions? What are the most recent theories as to its cause? 4. What are the varieties of fibroid tumors: (a) Signs and symptoms? (b) The treatment for the hemorrhage. 5. Describe the cause and mechanism of (a) rotation and (b) expulsion of the head in the second stage of labor. 6. Describe (a) hematophilia, (b) cephal-hematomata, (c) meningocele. 7. Define Bandl's ring. Explain how it retards labor. 8. Give the technic of the various methods of pelvimetry. 9. What are the characteristics of a hydrosalpinx? 10. Discuss ophthalmia neonatorum and the practical importance of its prevention.

SURGERY.

1. Give symptoms of surgical shock and explain their significance. 2. Describe the various ways of arresting hemorrhage. 3. Discuss local anesthesia, and describe the technic of its application in some major operation. 4. Describe the technic of ether narcosis, and give contra-indications to the use of the drug. 5. Describe Allis' or Pigelow's method of reducing outward dislocation of the hip joint, explaining the reason for each step. 6. Name the symptoms and signs which in your judgment would require immediate operation in a case of appendicitis. 7. What history and what present condition would lead you to advise operation in a latent or arrested case of pulmonary tuberculosis? 8. Symptoms and treatment of fracture of the clavicle? 9. Give the early symptoms of cancer of the stomach. 10. Give the symptoms and signs of strangulated inguinal hernia and describe a satisfactory operation for the condition.

CHEMISTRY AND HYGIENE.

1. Name the portals of entry in tuberculosis. How is bovine tuberculosis transmitted to mankind? 2. Give the formula for salt. What is its function in the animal economy? How is its presence demonstrated in the urine? 3. What are: (a) normal salts? (b) acid salts? (c) basic salts? (d) double salts? 4. Do the various fruits of the market infect the intestinal canal? How would you render the strawberry free from parasites and ova? 5. Describe hemoglobin. Name some of its properties. How is it changed to oxyhemoglobin? Give in detail the best test for it. 6. What conditions should condemn water for drinking purposes? 7. What is glycerin, butter, lecithin? Explain their relations to the fats. 8. Which is the most common poisonous compound of arsenic? How does it enter the system? Give symptoms and treatment. 9. What is uric acid? Does it occur free in the urine? What does its presence in the urine indicate? 10. What is the amount of CO_2 in the atmosphere? How does it vitiate it in crowded rooms? To avoid atmospheric vitiation, how much space should be allowed occupant of dormitories and hospitals?

Colorado July Report.—Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, July 3, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 70. The

total number of candidates examined was 16, of whom 11 passed and 5 failed, including one undergraduate and one osteopath. The following colleges were represented:

PASSED.	Year. Grad.	Per Cent.
College.		
University of Colorado	(1906) 72.3, 75.3, 81	
College of P. & S., Los Angeles	(1905)	74.1
Denver Homeo. Med. Coll.	(1906) 72.4, 73, 76.1	
Northwestern Univ. Med. School	(1901)	78.7
Eclectic Med. Inst., Cincinnati	(1906)	72.5
Jefferson Med. Coll.	(1905)	70
Royal University of Padua	(1884)	71.2
FAILED.		
Kentucky University	(1903)	66
Barnes Med. Coll.	(1905)	65.9
Missouri Med. Coll.	(1888)	48.7

Besides the following who were registered on presentation of acceptable credentials, there were also registered two old practitioners, one of whom was an army surgeon during the Civil War:

Cooper Medical College	(1894)
University of Colorado	(10, 1906)
Denver and Gross College of Medicine	(1, 1905), (18, 1906)
College of P. and S. Chicago	(1, 1904), (2, 1905)
Northwestern University Medical School	(1906)
Rush Medical College	(1888), (1892)
Bennett College of Eclectic Med. and Surg.	(1882)
College of P. and S., Keokuk	(1887), (1906)
Tulane University	(1901)
Maryland Medical College	(1905)
College of P. and S., Boston	(1894)
Harvard University Medical School	(1899)
University of Michigan	(1904)
University of Minnesota	(1904)
University Med. Coll., Kansas City	(1891), (1906)
Ensworth Medical College	(1897)
Northwestern Medical College, St. Joseph	(1892)
Barnes Medical College	(1895)
Niagara University	(1890)
New York Med. Coll. and Hospital for Women	(1894)
Albany Medical College	(1881)
Western Reserve University	(1883), (1904)
Eclectic Medical Institute	(1886), (1893)
University of the South	(1900)
University of Vermont	(1889)
Ecolé de Med. de Paris	(1904)

The following were rejected on account of not having acceptable credentials:

Northwestern University Medical School	(1897)
Chattanooga Medical College	(1903)
Fifth Medical College, Nagasaki, Japan	(1897)

Indian Territory July Report.—Dr. M. F. Williams, secretary of the Board of Medical Examiners of the Western District, sends us a list of individuals registered on their credentials without examination, at the meeting held at Muskogee, July 2, 1906. The following colleges were represented:

REGISTERED.	
Howard University	(1904)
Georgia College of Eclectic Medicine and Surgery	(1898)
Northwestern University Medical School	(1905)
National Medical University	(1903)
Indiana Medical College (Purdue University)	(1906)
Keokuk Medical College	(1900)
University of Louisville	(1894), (2, 1906)
Maryland Medical College	(1905)
Washington University, St. Louis	(1906)
College of P. and S., St. Louis	(3, 1906)
Barnes Medical College	(3, 1906)
Kansas City Medical College	(1901)
Missouri Medical College	(1884), (1906)
University Medical College, Kansas City	(1905)
Memphis Hosp. Med. Coll.	(1901), (1906)
Meharry Medical College	(1898), (1905), (5, 1906)
REJECTED.	
Gate City Medical College*	(1905)

* School not recognized.

Iowa May and June Reports.—Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Keokuk, Sioux City, Iowa City and Des Moines, May 23-24, May 31-June 2, June 6-8 and June 11-13, 1906, respectively. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75.

At the examination held at Keokuk the total number of candidates examined was 52, of whom 43 passed and 9 failed. The following colleges were represented:

PASSED.	Year. Grad.	Per Cent.
College.		
Keokuk Med. Coll. of P. & S.	(1905) 75; (1906) the grade of 77 was reached by two, 78 by six, 79 by three, 80 by two, 81 by one, 82 by six, 83 and 84 by five each, 85 by three, 86 by four, 87 by one and 88 by four.	
FAILED.		
Keokuk Med. Coll. of P. & S.	(1906) 60, 65, 67, 72, 73, 73, 74, 74	
College of P. & S., St. Louis	(1906)	60

At the examination held at Sioux City the total number of candidates examined was 17, of whom 14 passed and 3 failed. The following colleges were represented:

PASSED.	Year. Grad.	Per Cent.
College.		
Sioux City Coll. of Med.	(1906) the grades of 75 and 79 were reached by one each, 80 by five and 82, 83, 85 and 86 each by one each.	
Illinois Med. Coll.	(1904)	75
Creighton Med. Coll.	(1906)	86
New York University	(1893)	91
FAILED.		
Sioux City Coll. of Med.	(1906) 70, 73, 73	

At the examination held at Iowa City the total number of candidates examined was 59, all of whom passed. The following colleges were represented:

PASSED.	Year. Grad.	Per Cent.
College.		
University of Iowa	(1906) the grade of 77 was reached by three, 78 by one, 79 by three, 80 and 81 by four each, 82 and 83 by seven each, 84 by five, 85 by four, 86 by six, 87 by eight, 88 by one, 89 by two and 90, 92 and 93 by one each.	
University of Louisville	(1906)	86

At the examination held at Des Moines the total number of candidates examined was 30, of whom 27 passed and 3 failed. The following colleges were represented:

PASSED.	Year. Grad.	Per Cent.
College.		
Yale University	(1903)	86
Drake University	(1906) 79, 82, 83, 85, 86, 87, 88, 89, 91	
Bennett Med. Coll. Eclec., Chicago	(1906)	85
College of P. & S., Chicago	(1906) 81, 82, 83, 88	
Northwestern Univ. Med. School	(1904)	90
Rush Med. Coll.	(1902)	81
University of Michigan	(1904)	90
Creighton Med. Coll.	(1906) 76, 78, 79, 81, 81, 85	
Jefferson Med. Coll.	(1906)	84
Meharry Med. Coll.	(1902)	75
Royal University, Christiania, Norway	(1903)	80
FAILED.		
Hahnemann Med. Coll., Chicago	(1906)	60
Ensworth Med. Coll.	(1905)	72
Queen's University, Kingston	(1906)	68

New Mexico May Report.—Dr. B. D. Black, secretary of the New Mexico Board of Health, sends us a report of those registered on their credentials without examination, at the meeting held May, 1906. The following colleges were represented:

Arkansas University	(1884)
Denver and Gross College of Medicine	(1905)
Gross Medical College	(1888)
Atlanta Medical College	(1898)
Bennett College of Eclectic Medicine and Surgery, Chicago	(1884)
Northwestern University Medical School	(1896)
Rush Medical College	(1903)
Indiana Medical College*	(1873)
Hahnemann Medical College, Chicago	(1890), (1903)
Hospital Coll. of Med. Louisville	(1894), (1900), (2, 1904), (1905)
University of Louisville	(1903)
Kentucky School of Medicine	(1898)
Tulane University	(1898), (1902)
Baltimore Med College	(1892)
University of Michigan	(1883)
College of P. & S., St. Joseph	(1882)
University Med. Coll. Kansas City	(1900), (2, 1904)
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(2, 1897) (1899), 1904), (1905).
University of Missouri	(1905)
St. Louis Medical College†	(1890)
University of Minnesota	(1898)
Cornell University	(1899), (1902)
Long Island College Hospital	(1884)
New York Homeopathic Medical College and Hospital	(1904)
Medical College of Ohio	(1887)
Miami Medical College	(1878), (1881)
Pulte Medical College	(1887)
Western Reserve University	(1890)
Starling Medical College	(1897), (1898)
Jefferson Medical College	(1898), (1905)
Vanderbilt University	(1887)

* In 1878 became Medical College of Indiana.
† Became Med. Dept. Washington University in 1891.

Medical Organization

Georgia.

WASHINGTON COUNTY MEDICAL SOCIETY.—With the aid of Dr. W. W. Pilcher, Warrenton, councilor for the Tenth district, the physicians of Washington County met at Sandersville, organized a county medical society on the standard plan and elected the following officers: Dr. David E. McMaster, Tennille, president; Dr. Oscar L. Rodgers, Sandersville, vice-president; Dr. Henry A. Hermann, Sandersville, secretary and treasurer, and Drs. Eugene A. Harris, Sandersville; Julian H. Evans, Davisborough, and D. L. Cheatham, Sandersville, censors.

Illinois.

MASSAC COUNTY MEDICAL SOCIETY.—At a meeting held in Metropolis recently Dr. Henry C. Mitchell, Carbondale, councilor for the Ninth district, organized a county medical society on the standard plan.

PERRY COUNTY MEDICAL SOCIETY.—At a meeting of the physicians of Perry County, held in Pinckneyville, a county society was organized on the standard plan with the following officers: Dr. William L. McCandless, Pinckneyville, president; Dr. Martin C. Carr, Du Quoin, vice-president, and Dr. James W. Smith, Cutler, secretary and treasurer.

Indian Territory.

NORTHERN DISTRICT MEDICAL SOCIETY.—At a meeting of this society in Pryor Creek, Dr. William T. Tilley, Pryor Creek, was elected president and Dr. Robert H. Harper, Afton, secretary.

FIFTEENTH DISTRICT MEDICAL SOCIETY.—The physicians of the Fifteenth district met in South McAlester, June 30, on call of Dr. Eliphalet N. Wright, Olney, councilor for the central district, to organize a new society in conformity with the new arrangements under statehood.

TULSA COUNTY MEDICAL SOCIETY.—The physicians of Tulsa met July 7 with Dr. B. J. Vance, Checota, councilor for the Western district and organized a medical society on the standard plan with the following officers: Dr. J. C. W. Bland, Tulsa, president; Dr. W. Albert Cook, Tulsa, vice-president; Dr. C. L. Reeder, secretary, and Dr. C. T. Hendershort, treasurer. Drs. Kennedy, Hawley and Webb, censors.

TWENTY-SIXTH RECORDING DISTRICT MEDICAL SOCIETY.—On June 8 a medical society was organized at Marietta by Dr. Herbert P. Wilson, Wynnewood, councilor for the Southern district. Of the twenty-four physicians in the district, twenty were present and were enrolled as charter members. The following officers were elected: Dr. A. E. Martin, Marietta, president; Dr. Benjamin S. Gardner, Marietta, vice-president, and Dr. John D. Batson, Marietta, secretary and treasurer.

TWENTY-FIRST RECORDING DISTRICT MEDICAL SOCIETY.—At a meeting of the physicians of the Twenty-first recording district, held in Ardmore, July 19, Dr. Herbert P. Wilson, Wynnewood, councilor for the Southern district, presided and an organization was formed, to include the county in which Ardmore is situated when the counties are laid out for the new State of Oklahoma. The constitution and by-laws recommended by the American Medical Association were adopted. Dr. Philip H. Stephens, Ardmore, was elected president; Dr. William T. Bogie, Ardmore, vice-president, and Dr. Robert H. Alvis, Ardmore, secretary and treasurer; Dr. Thomas S. Booth, delegate to the State Medical Society, and Dr. Jerome C. McNees, Ardmore, alternate.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Nasal Hemorrhages.

According to Anton Weisner in an abstract in *Post Grad.*, among the many methods employed to check epistaxis, the simple, and as a rule effective method of making pressure on the septum, with the thumb and forefinger should always be tried. The lateral nasal cartilages should be thoroughly pressed, and this commonly checks any hemorrhage coming from the lower anterior portion of the septum. This pressure should be steadily kept up for at least one minute. In case the bleeding point is far back in the nose strips of sterile gauze should be used and the chamber packed. The disadvantage of this method is that when the packing is removed the clots are torn from the vessels and hemorrhage recurs. In such instances it is recommended that a thin rubber bag be attached to a catheter, lubricated with an antiseptic oil, and after being introduced far back into the naris, inflated. The pressure thus made is of value in checking the hemorrhage, and when a proper length of time has elapsed for the blood clots to form, the bag may be allowed to collapse, when it can be removed without difficulty. According to Weisner extremes of heat and cold are of comparatively little value in checking such hemorrhages, as the degree of heat required, in order to be effective, causes entirely too much pain. Cold water is somewhat more serviceable, used as ice-cold douches to the bleeding wall or as cold applications to the outside. Reflexly, benefit is said to be derived from the applications of cold to the nape of the neck, especially in plethoric individuals, and as some writers state, even wrapping the scrotum in cold applications is serviceable on a similar theory.

The actual cautery used at a red heat is of great assistance in blocking these arteries. The crusts left after the cautery should not be disturbed, as they are aseptic.

Panezewicz, in the same periodical, emphasizes the value of introducing small oblong pieces of ice into both nares and replacing them by fresh pieces as fast as they are melted, and keeping this treatment up for a period of from five to ten minutes. The author mentions other preparations, as vinegar, chromic acid, alum, silver nitrate, perchlorid of iron and turpentine. The perchlorid of iron is not only an unpleasant preparation to use, but may cause sloughing with the danger of formation of a pyemic embolus.

He recommends the following combination as a powder to be insufflated into the nares as necessary:

R. Acidi tannici	gr. viii	50
Antipyrini	gr. xv	1|00
Sacchari pulvis	3iiss	10|00

M. Sig.: A small amount to be insufflated into the affected side of the nose as necessary to check the hemorrhage.

Gelatin, in from 5 to 10 per cent. strength, warmed, and injected into the nose, has been recommended, especially in cases of hemophilia. This preparation not only checks the hemorrhage, but has a tendency to nourish the tissues with which it comes in contact.

X-Ray Burns.

The following combination is recommended by Mewborn in St. Louis *Med. Review* as giving prompt relief from *x*-ray burns:

R. Plumbi acetatis	gr. c	6|65
Aquæ	3iiss	75|
Solve et adde:		
Aluminis sulph	3i	4|
Sodii sulph	gr. x	|65
Aquæ	3iv	120|

M. Sig.: Apply locally to the affected areas.

Carcinoma of Stomach.

Before resorting to morphin in the treatment of gastric carcinoma, the following combinations are recommended in the *Medico-Chir. Jour.*:

R. Cocainæ hydrochlor		
Codeinæ, āā	gr. viiss	|50
Aquæ calcis	3v	150|

M. Sig.: One teaspoonful at a dose as the individual case may require.

Or,

R. Bismuthi subnit	3i	4|
Acidi carbolici	gr. xv	1|
Aquæ dest.	3iv	120|

M. Sig.: Shake the bottle and take one teaspoonful every hour until relieved.

Chorea.

In an article on chorea in Merck's Archives, Shoemaker states that this disease more frequently occurs in childhood, and from the fifteenth to twentieth year, and especially in females and the white race. It not infrequently follows some of the infectious diseases, probably due to the exhaustive influences exerted on the central nervous system. It most commonly follows scarlet fever, diphtheria, measles, typhoid fever and rheumatism with heart complications.

The treatment should consist in increasing the elimination by the bowel and stimulating the liver function. For this purpose the mild chlorid of mercury is recommended in doses of gr. 1/10 each, combined with the same amount of sodium bicarbonate and repeated every half hour for fifteen doses. One hour after giving the last powder, magnesium citrate, drams 6 (24.00) should be administered.

To control the choreiform movements in some of these cases Shoemaker recommends the administration of cimicifuga racemosa, giving the fluidextract in 5 minim doses (.20), three times a day after food. The dose should be increased daily until full physiologic effects are produced. The symptoms thus produced are vertigo, intense headache and nausea. This preparation, according to Shoemaker, not only ameliorates the symptoms by lessening the reflex activity in the spinal cord, but when prescribed in small doses it aids and stimulates digestion by awakening the action of the glands along the alimentary tract.

In cases in which the menstrual flow has been checked this preparation is also of value. It serves as a stimulant to the heart and general circulation similarly to digitalis. As an efficient form of medication to be used along with cimicifuga as a synerguist, the following combination is recommended:

℞ Ext. hyoscyami
Ext. cannabis indicæ, ää ..... gr. ¼ | .015
Camphoræ monobromatis ..... gr. v | .30
Olei theobromatis, q. s.

M. Ft. suppository No. i. Sig.: One suppository inserted into the rectum three times daily.

Salicylic Acid.

IN PRURITUS.

The following combination containing salicylic acid is recommended by Ringer in the treatment of pruritus of the vulva and anus:

℞ Acidi salicylici ..... 3ii | 8
Olei theobromæ ..... 3vi | 24
Olei myristicæ ..... f. 3ii | 8

M. Ft. unguentum. Sig.: Apply locally to the affected parts.

FOR CORNS.

In the treatment of corns Hare recommends the following combination:

℞ Acidi salicylici ..... gr. xxx | 2
Ext. cannabis ind. ..... gr. v | .30
Collodii ..... f. 3ss | 15

M. Sig.: Apply with a brush until a good coat is formed.

FOR WORMS.

To get rid of thread worms or seat worms the following injection by the bowel is recommended:

℞ Acidi salicylici
Sodii boratis, ää ..... 3ss | 2
Aquæ ..... Oi | 500

M. Sig.: Warm gently and inject into the bowels.

For a child the amount should be reduced one-half in strength.

FOR BROMIDROSIS.

In the treatment of bromidrosis of the feet associated with fetor, salicylic acid is of service, dusted over the parts, or the following powder may be used:

℞ Acidi salicylici
Pulv. amyli, ää ..... 3ss | 15

M. Sig.: Apply locally to the feet.

FOR ECZEMA.

In eczema of the face and hands, when the eczema is moist, the following combination is advised, applied locally:

℞ Acidi salicylici ..... gr. v-x | .30-.65
Pulv. amyli
Pulv. zinci oxidi, ää ..... 3ii | 8
Petrolati, liq. ..... f. 3ss | 15

M. Ft. unguentum. Sig.: Apply locally.

FOR CHANCRES.

In the treatment of soft chancres and venereal sores salicylic acid is sometimes of value:

℞ Acidi salicylici ..... gr. xx | 1.20
Alcoholis ..... gtt. xlv | 3
Adipis benzoinati ..... 3ii | 60

M. Sig.: Apply locally.

Or,

℞ Acidi salicylici ..... gr. xv | 1
Pulv. amylı vel cretæ ..... 3ii | 8

M. Sig.: Apply locally.

Incompatibility of Potassium Iodid.

In speaking of the frequency of prescribing preparations which are incompatible, our attention is called to an article by Jennings in *London Hosp. Gazette*, who states that potassium iodid, when prescribed with other preparations, frequently causes trouble. This preparation, in a simple solution, when exposed to the light, often liberates iodin.

Potassium iodid should never be prescribed with ferric chlorid as the latter preparation is rapidly decomposed, forming ferrous iodid and free iodin. According to Jennings, however, the two scale preparations, iron and ammonium citrate, and tartarized iron are compatible with potassium iodid.

A crystalline precipitate of strychnia iodid is formed when strychnin hydrochlorid is mixed with a solution of potassium iodid, and in concentrated solutions a precipitate may be formed immediately.

Spirits of nitrous ether contains a small amount of free nitrous acid and a free acid where combined with potassium iodid may liberate iodin. In the same way sodium nitrite may produce like results.

The following combination serves as an example of this incompatibility:

℞ Sodii nitritis ..... gr. ii | .12
Potassii iodidi ..... gr. v | .30
Caffeinæ citratis ..... gr. x | .65
Aquæ ..... f. 3i | 30

M. Sig.: As directed.

In the foregoing free iodin will be liberated.

Caffein citrate in the above, being a very weak base, is separated into the alkaloid caffein and citric acid when mixed with water, and the latter decomposes the sodium nitrite, forming the nitrous acid.

Bismuth oxynitrate is incompatible with potassium iodid, when the two are mixed with water, producing a yellowish color, changing to a brick color later. This is a case of double decomposition, no free iodin being produced.

Ocular Eczema.

In the treatment of ocular eczema, which is most commonly a disease of childhood, and which forms 21 per cent. of all the diseases of childhood, Frederick Krauss in *Med. Record* states that three phases of treatment should be considered: 1. Hygienic and dietetic; 2, medicinal; 3, local. The hygienic treatment, according to Krauss, should consist in fresh air, wholesome, nourishing food, the abstinence from sweets, pastry of all sorts, and in severe cases absolute rest in bed. The room should be so situated as to exclude the direct sun's rays, but should admit plenty of light. A dark room should never be permitted, but the eyes should be protected from strong light by tinted lenses, a shade or a bandage over the eyes if the discharge is not too great.

The diet should consist of milk properly modified, eggs, fresh cooked meat or raw meat juice, orange juice, stewed fruits, etc., omitting puddings and pies and all pastries. Sugar corn, bananas, peanuts and pretzels should be especially excluded from the diet.

Salt water baths daily are recommended, given warm at bedtime. The medical treatment consists of tonics and alteratives with the relief of constipation.

Krauss recommends the following combination as a tonic and alterative:

℞ Syr. ferri iodidi ..... 3iv | 15
Syr. acidi hydriodici ..... 3i | 30
Syr. hypophos. co. (N. F.) ..... 3iss | 45

M. Sig.: One teaspoonful in water before each meal. In children from twelve to fifteen years of age two teaspoonfuls may be given.

Attention must also be directed to eczema of other parts of the body, especially to the nares, for which an alkaline cleansing wash, followed by a bland ointment, such as the unguentum acidi borici is advised.

The local treatment to be carried out in the milder cases of eczema of the conjunctiva is a simple boric acid wash, with the

addition of a small amount of cocain and adrenalin, if much itching be present. This preparation, however, should be used with care.

For this purpose the following combination is recommended by Krauss:

R.	Acidi borici	gr. xxv	1.65
	Cocainæ hydrochlorici	gr. v	.30
	Sol. adrenalin (1/1,000)	ʒi	4
	Aquæ dest.	ʒii	60

M. Ft. solutio. Sig.: Five drops in the eyes every three hours.

When the cornea is attacked the ciliary muscle should be put at rest by the use of a mydriatic, such as atropin. The following combination is recommended locally:

R.	Hydrarg. oxidi flavi	gr. i	.06
	Petrolati	ʒii	8

M. Ft. unguentum. Sig.: A small amount to be introduced into the eye at night.

This ointment should not be employed too early in the disease. After the disease has passed the acute stage insufflations of iodoform or calomel into the ulcer act beneficially according to Krauss.

In the treatment of eczema of the lids and face the following combination is recommended:

R.	Acidi borici	gr. xv	1
	Petrolati, liq.	ʒiv-ʒi	15-30

M. Ft. unguentum. Sig.: Apply freely to the affected areas.

Turpentine in Typhoid Fever.

The following combinations are recommended by Hare for the relief of flatulency in typhoid fever:

R.	Olei cinnamomi	gtt. xx	1.20
	Olei terebinthinæ	f. ʒiv	15
	Mucil. acaciæ, q. s. ad	f. ʒiv	120

M. Sig.: One teaspoonful every four hours.

Or,

R.	Olei terebinthinæ	f. ʒi	4
	Olei amygdalæ	exp. f. ʒss	15
	Tinct. opii	f. ʒii	8
	Mucil. acaciæ	f. ʒv	20
	Aquæ laurocerosi	f. ʒss	15

M. Sig.: One teaspoonful every four hours to relieve the tympanites.

As an enema the following combination is recommended:

R.	Olei terebinthinæ	f. ʒi	30
	Olivæ	f.ʒiss	45
	Pulv. camphoræ	gr. xx	1.20
	Mucil. acaciæ	f. ʒss	15
	Aquæ	f. ʒx	300

M. Sig.: Stir well and use as an enema.

Medicolegal

Powers Under Health Law.

The Court of Appeals of Kentucky holds, in Meyers vs. Duddenhauser, that where the general council of a city was authorized by statute to establish and enforce quarantine laws and regulations to prevent the introduction and spread of contagious diseases in the city, to regulate hospitals, infirmaries, etc., within the city, and to secure the general health of the inhabitants of the city, under this provision the city had power to pass an ordinance to the effect that no person dying in the city should be interred in the city cemetery without a burial permit from the board of health. The board of health was authorized to make reasonable regulations as to the issuing of such permits, and it was not an unreasonable regulation to require the certificate of the attending physician as to the cause of the patient's death.

Attending Physicians May Testify as to Probabilities—Cross-Examination.

The Supreme Court of Iowa says, in the personal injury case of Vohs vs. Shorthill & Co., that the rule, as generally applied, may be conceded to exclude medical testimony of merely possible or speculative results of the present condition of an injured party. But it is also too well settled to require citation of authorities that where an injury negligently occasioned is permanent or, if not permanent, recovery is not complete at the time of the trial, the injured party is entitled to damages already accrued, and such other damages, also, as the evidence shows him reasonably certain to sustain in the future. As bearing on that point it is certainly competent for a physician who has examined and treated him and knows his condition to express an expert opinion as to future consequences reasonably to be expected to follow the injury. And the court says of a certain physician that he was not asked to state results which were merely possible, but whether a given result was "likely;" i. e., probable, or reasonably to be expected. This, the court thinks, was competent within the rule. It must also be remembered that this witness was testifying from his personal examination, knowledge, and treatment of the plaintiff's injury, and there was no occasion for propounding hypothetical questions or to assume or state any especial fact or series of facts as a foundation for the inquiry to which answer was sought. Again, it says, with reference to the cross-examination of another physician, that, in the cross-examination of witnesses, and especially of expert witnesses, it is ordinarily allowable for counsel to cover a much broader range of inquiry than would be permitted in the examination of a friendly witness in chief, and the limit was not exceeded in this instance by asking the witness, who had expressed an opinion negativing the likelihood of any loss of vision in the plaintiff's right or well eye, whether certain deleterious effects mentioned might not yet appear.

Power of Executor of Will to Waive Privilege.

The Supreme Court of Indiana says, in Heaston vs. Kreig, that the statute which makes physicians incompetent to testify to matters concerning their patients which they learn by reason of their professional relation contains no qualifying terms. As the patient may waive the privilege, since it is for his benefit, this court recognizes as proper its holdings that the executor of the patient who enjoyed such privilege may, for the purpose of upholding his attempted testamentary disposition of his property, waive the privilege which the statute confers. But the court would regard it as a perversion of said holdings to attempt to apply them to this case, where there were two wills involved, one dated April 30, 1903, and the other, dated Sept. 1, 1903, the attack in this case being solely on the latter, and the executor of the former (whose wife was a legatee thereunder) attempting to waive the objection that certain physicians were incompetent to testify in aid of such attack. Had this contest come after the formal probating of the instrument of Sept. 1, 1903, and the issuing of letters of administration with the will annexed, the holder of such letters would have been charged with a duty of seeking to maintain said instrument, and he alone, in view of the posture of the case, could have waived the privilege of his decedent. The fact that these steps were not taken made no difference so far as the former will was concerned; those who claimed under it could not waive the objection to a disqualified witness in order that they might overthrow what was prima facie the valid act of the decedent, for whose benefit the statute had interposed the bar. It was not a race of diligence as to who could first procure the probating of the will which he possessed, so as to put the other party on the defensive; a waiver must have its basis in the right of the decedent, and in such a case as this it can only be invoked by the executor who is seeking to support what prima facie at least was the valid act of his testator.

Manslaughter—Failure of Husband to Call Physician.

The Court of Appeals of Kentucky says, in Westrup vs. Commonwealth, that where the husband neglects to provide necessaries for his wife, or medical attention in case of her illness, he will be guilty of involuntary manslaughter, provided it appear that she was in a helpless state and unable to appeal elsewhere for aid, and that the death, though not intended nor anticipated by him, was the natural and reasonable consequence of his negligence.

In this case there was a conviction of involuntary manslaughter, alleged to have been committed by the accused by

wilfully neglecting to furnish his wife, then pregnant and about to be delivered of a child, with such care and attention as were necessary during her confinement in childbirth, thereby causing her death. But it was manifest from the evidence that the confinement came five days sooner than they expected it; that the wife, having read, besides other books, "Tokology," and corresponded with its author, had resolved to do without the services of a physician in her confinement, and had influenced her husband to adopt her opinion that the services of a physician would be unnecessary at such a time; that during her labor he dutifully remained with her, and assisted her to the best of his ability, and as she directed him; that when he discovered her peril he called in two women living in the same house to assist him in caring for both mother and babe; and that on the suggestion of one of them he immediately, and over his wife's objection, sent for a competent physician to minister to her, and that the latter, in spite of her protestations, apparently did what he could, and all she would allow him to do, to relieve her, but failed to preserve her life. In view of these facts, and the further facts that the husband was an affectionate one, and had never appeared indifferent to his wife or neglectful of any conjugal duty, and that in failing to earlier call in a physician he acted in good faith and at her request, though he doubtless erred in so doing, this court fails to find any just or reasonable ground for the verdict of the jury; indeed, it thinks it wholly without support from the evidence.

Those of us who reverence the medical profession and implicitly trust the learning and skill of the family physician, the court goes on to say, may be disposed to attribute to ignorance or prejudice such a lack of confidence in that profession as was manifested by this wife, and wonder that the husband, in the face of such a crisis as confronted them, should have allowed himself to be influenced to trust to Nature's laws, or supernatural aid, rather than medical skill; but the fact remains that there are many who reject, as they did, both medicine and surgery for other means, or supposed means, of healing, and are perfectly sincere in doing so. We may concede that the wife made a grievous mistake in adhering to her purpose of rejecting medical aid, yet in view of the suffering, and, in the end, death, to which she subjected herself, her sincerity can not be doubted. And certainly there was nothing in the evidence which tended to prove that the husband, though making the same mistake, was any less sincere than she, unless it was the fact of his sending for a physician after the birth of the child. This act, however, appeared from the evidence to have resulted more from his desire to leave nothing undone for her relief than from a belief that benefit would result to the wife from the physician's presence or treatment. In any event, it was the very opposite of neglect, and should go to the credit, instead of the debit, side in the husband's accounting for the offense charged in the indictment. One cannot be said in any manner to neglect or refuse to perform a duty unless he has knowledge of the condition of things which require performance at his hands.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

1 Medical Education and Medical Progress. G. H. Grant, Richmond, Ind.
2 *Insane Lovers. J. W. Stevens, Amityville, L. I.
3 Medical Inspection in Public Schools. I. C. Philbrick, Lincoln, Neb.
4 *Removal of an Intraligamentary Cyst and Bilateral Oöphorectomy During Early Pregnancy Without Interrupting Gestation. A. Brothers, New York.
5 *Contribution to the Etiology of Otitis Media Acuta Suppurativa Post Morbillos. G. Baar, Portland, Ore.

2. **Insane Lovers.**—Stevens calls attention to this subject as one of much importance to the general practitioner who first sees these cases. They are not uncommon in asylums and in neurologic practice. The patient may seem clear and rational on all other subjects, so that for some time he or she is considered entirely sane. The maniacal, insane lovers differ in certain prominent features from those of the paranoid class. In the former group the origin of this love is always to be traced to the abnormal sexual excitement, increased susceptibility to stimuli, facilitated release of impulses, and the lack of the restraining influence of the ethical sensibilities in the presence of elation and sense of well-being. At the beginning of this condition delusions and hallucinations are nearly always absent. In the paranoid case this love is only a part of a progressive and systematized delusional state. A strangely erotic element is not necessarily present. The maniacal patient often recognizes the abnormal nature of her impulses, while the paranoiac never does. The paranoiac is practically always monogamous, the maniacal often polygamous. In the latter the love disappears with the subsidence of the active symptoms of the individual attack, while in the former it remains throughout life. These patients should be carefully looked out for, not only for their own sake, but for the sake of their victims.

4. **Bilateral Oöphorectomy and Removal of Intraligamentary Cyst.**—Brothers operated in a case of this kind. The patient was seven weeks pregnant. The tumor lay quite low in the cul-de-sac of Douglas. Laparatomy was performed through a suprapubic transverse incision. The intraligamentary cyst was found on the right side, behind the uterus, and was removed in one mass with the closely connected Fallopian tube and cystic ovary. The ovary of the left side was found enlarged and microcystic. This ovary was exsected. Convalescence was uninterrupted, and the patient was delivered at term of a healthy child.

5. **Etiology of Otitis Media Suppurativa Post Morbillos.**—Baar reports the history of five children in the same family who were attacked with measles. In all of them there appeared an acute suppurative otitis media. In three of these children the mastoid process, the antrum and the cranial cavity had to be opened on account of alarming cerebral symptoms which appeared in spite of previous painstaking antiphlogistic and antiseptic treatment, poultices and drainage after careful irrigation of the exterior auditory meatus with warm solutions of borax or instillation with peroxid of hydrogen and drying. Baar declares that the appearance of purulent inflammation of the middle ear at the end of the second week of illness seems to speak very much against the universal view that the measles otitides are caused by the primary exanthem. The pus taken from the depth of the exterior meatus, as well as from the antrum, mastoid process, and extradural abscesses, contained the same staphylococcus.

New York Medical Journal.

August 18.

6 *A Model for a New Ophthalmotrope; the Gonioscope. Some Phases of Ocular Motility. (To be concluded.) D. E. Shute, Washington, D. C.
7 Treatment of Cancer of the Rectum. S. G. Gant, New York.
8 Case of Vesicular Keratitis with a Filamentous Formation of the Detached Epithelium. B. Chance, Philadelphia.
9 Present Status of the Treatment of Appendicitis; the Family Physician's Responsibility. R. C. Coffey, Portland, Ore.
10 Our Duties as Citizens in the Prevention of Tuberculosis. G. H. Kress, Los Angeles, Cal.
11 Report of the Year's Work in the Gynecologic Service of the Samaritan Hospital, Including the Technic. F. C. Hammond, Philadelphia.
12 Value of the Bier Treatment. E. Adams, New York.
13 Scientific Murder. J. E. Herman, Brooklyn.
14 An Observation Chart. J. H. Barach, Pittsburg, Pa.

6. **The Gonioscope; New Ophthalmotrope.**—Shute's device is constructed on the same principle as Landolt's, but differs from the latter in its simplicity, and in the ease with which it can be constructed by any one out of very simple materials, such as an india-rubber ball, a hat pin and a tobacco box. It also differs from Landolt's apparatus in the fact that the rubber ball can be so easily painted, or marked with ink and made to serve as a model of an eyeball, instead of looking like a mere frame work of rings as does Landolt's; it also has the great merit of concentrating the attention of the student on a single axis at a time instead of distracting his attention by the presence of a number of very different axes. It can be made to show the rotation of the eye about axes

in Listing's plane, thus giving lessons in physiology; or it can represent movements of the eyeball about axes perpendicular to individual muscle planes and thus out of Listing's plane so that the pathology of ocular motility can be investigated with the greatest accuracy. It readily permits also a study of ocular rotations under the influence of internal and external recti when attached to the eyeball, either too high or too low. Lastly, it differs from Landolt's instrument, in that it was primarily constructed for the purpose of demonstrating the necessity of diversity, instead of community of axes for the obliques on the one hand, and the superior and inferior recti on the other hand. In short, the instrument differs from all others, Shute states, in its extreme simplicity, flexibility and adaptability for demonstrating all the known ocular rotations on sound physiologic principles. The reader is referred to the original article for a complete description of the apparatus and the method of its use.

Boston Medical and Surgical Journal.

August 16.

15 *Two Cases of Gastrosuccorrhea or Gastric Hypersecretion Associated with Atrophic Cirrhosis of the Liver. H. F. Hewes, Boston.
16 *Serum Treatment of Exophthalmic Goiter. G. A. Waterman, Boston.
17 Introduction to the Study of the Fundamental Cause of Splanchnoptosis—Abdominal Incompetence. A. C. Vietor, Boston.
18 Incontinence of Urine. C. G. Kerley, New York.

15. **Gastrosuccorrhea Associated with Atrophic Cirrhosis of Liver.**—The special points of interest in connection with the few cases reported by Hewes are the following: The cases represented, in their special symptomatology, the history of the symptoms and the character of the findings revealed by the examination of the contents of the stomach, typical cases of gastrosuccorrhea, one of continuous hypersecretion, the other of intermittent or periodic hypersecretion; and this stomach symptomatology represented, at the time the cases first came under observation, the prominent and only definite symptoms present. The special pathologic conditions of the stomach, with which hypersecretion such as was present in these cases is ordinarily associated, that is, which most frequently prove to be the primary causes of hypersecretion, gastrectasis, or ulcer of the stomach, were not present in these cases. This fact was proven in the first case, that of continuous hypersecretion, by the findings at autopsy in addition to the results of clinical examination. In the second case it was indicated by the results of clinical examination. The pathologic condition of cirrhosis of the liver was present in both cases. In the first case atrophic cirrhosis of advanced degree was found at autopsy. In the second case the diagnosis of cirrhosis was based on the finding of an enlarged liver plus the marked alcoholic history of the patient.

16. **Serum Treatment of Exophthalmic Goiter.**—The serum in the treatment of the five cases reported by Waterman was derived from blood drawn from the jugular vein of a goat two weeks or more after the removal of the thyroid gland. It was invariably used subcutaneously. The first patient received the serum in 1 c.c. doses, about five times a week, for the first three months, and then 2 c.c. doses, about twice a week, for the next three months, after which time 3 c.c. were given every eight or ten days for two months. The patient has been free from any signs of the disease for a year and a half. The pulse varies between 70 and 75. The second patient was given daily doses of 2 c.c. of serum for a week, when a general urticaria developed necessitating the discontinuance of the treatment for two weeks. At the end of this time she was given daily doses of 1.5 c.c. for a period two weeks, and then 3 c.c. once a week for two months, and once a month for three months. Six months after the treatment was stopped there were no signs of the disease and the patient was well in every respect. The same treatment was given in the remaining three cases, but not with equally good results. Two of the patients were improved, while one remained unimproved. In one of the improved patients the treatment was continued for eight months, and it is interesting to note that the hair of this patient has become dry and brittle and is turning gray. In none of these cases was the disease of more than four years' duration. The two patients who were cured were of one year and four years' duration, respectively.

Lancet-Clinic, Cincinnati.

August 18.

19 Some Features of Gastric Ulcer. W. D. Haines, Cincinnati.
20 Address to Graduating Class of the Medical College of Ohio. A. Ravogli, Cincinnati.

St. Louis Medical Review.

August 11.

21 An Unusual Case of Glaucoma. J. M. Ball, St. Louis.
22 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

New Orleans Medical and Surgical Journal.

August.

23 Affections Characterized by Gastroenteric Catarrh. G. F. LaRoque, Richmond.
24 Abortion. T. A. Roy, Avoyelles Parish.
25 Typhoid Fever. F. M. Thornhill, Arcadia.
26 Anomalies of Typhoid Fever. J. Atkinson, Arcadia.
27 *Surgical Treatment of Prostatic Hypertrophy. S. P. Delaup, New Orleans.

27. **Treatment of Prostatic Hypertrophy.**—Delaup reviews the operative treatments for prostatic hypertrophy that have been found to be the best, and concludes as follows: A routine method is not applicable to the treatment of prostatic hypertrophy; every case is a law unto itself, and the treatment will depend on the various conditions presented in each individual case. The prostatic suffering from persistent severe cystitis, or difficulty or pain in catheterism, should early receive operative relief; delay is destructive to his urinary apparatus, and hence to his chance for life and comfort. The dangers attendant on the daily catheterism are greater than those of a radical operation performed at the onset of the symptoms caused by the obstruction, and the earlier the operation the fewer will be the complications encountered. The choice of operation must be determined partly by the patient's vigor and partly by the condition of the bladder and kidneys. In patients too weak to withstand an operation, suprapubic drainage is advised, and if improvement follows this procedure, then a radical operation is indicated. The proper time to perform a radical operation is reached as soon as it becomes necessary for a patient to resort to daily catheterism. A perineal prostatectomy is best suited for those patients in whom the enlargement of the lateral lobes has a tendency to progress toward the rectum, to obstruct the urethra; or to project backward into the bladder. This method is applicable in fully 90 per cent. of all cases, and is the surest, the safest and probably the quickest method of curing the patient. In early operations the results are most satisfactory, recovery rapid, the mortality varying between 5 and 7 per cent. Suprapubic prostatectomy, combined with perineal drainage, is wisest when there is an enormous intravesical hypertrophy of the lobes, especially if the condition is associated with tumor formation projecting well back into the bladder. A prostatectomy is usually attended with more risk than the Bottini operation, and the convalescence is more prolonged. Therefore, in suitable cases in which the general health and kidneys contraindicate more radical measures, and also in those cases in which prostatectomy is refused, the Bottini operation is especially indicated.

The Canada Lancet, Toronto.

August.

28 *Nostrums and Proprietary Medicines. J. Hunter, Toronto.
29 Medical Thoughts, Facts, Fads and Fancies. J. S. Sprague, Stirling, Ontario.
30 Sir Charles Hastings, the Founder of the British Medical Association. J. Ferguson, Toronto.

28. **Nostrums and Proprietary Remedies.**—Hunter prescribes conditions as they exist and suggests remedial measures. He says that materia media, pharmacy and therapeutics, as compared with the other branches of medicine, are in a morbid state. Our knowledge of these is, he declares, lamentably defective, the literature is rankly unscientific, and our practice empirical and eratic. The first thing necessary in the way of a remedy is a radical change in the curricula of our medical colleges. The most competent teachers should be provided, and these should be enthusiasts. There is too much nihilism in therapeutics. Time and facilities for teaching these sub-

jects profitably and intelligently should be provided. The importance and value of a thorough knowledge of materia medica and therapeutics should be indellibly impressed on the mind of every medical student. Therapeutics should be taught not only rationally and practically, but in minute detail. The mere enumeration of principles is not sufficient. A suitable selection of drugs should be made and the properties of these thoroughly learned, in order that the student may know how to prescribe them so as to get their full medicinal effects. When physicians have learned the art of prescribing standard remedies in an attractive and palatable form the field of rational and scientific therapeutics will be reclaimed.

The individual physician should replenish his library with the best literature to be procured on these subjects. He should not be led astray, Hunter says, by mercenary or fraudulent literature into prescribing nostrums whose composition is unknown. Every physician should take the time necessary to become thoroughly acquainted with all the drugs and remedies he needs to use. Every physician should point out to his patients the evils arising from the indiscriminate use of any drug or remedy. Medical associations and societies should use every means at their command to mitigate these evils. Far more attention should be given to materia medica and therapeutics at medical meetings. Committees should be appointed to investigate all new remedies. Medical journals should positively refuse to advertise any preparation, drug or compound whose composition and qualities are unknown. No medical journal, manufacturer or exploiter has any right to imperil the lives of others for gain or any purpose whatever.

Chicago Medical Recorder.

August 15.

31 Action of Antiseptics on the Parasite. A. Gehrmann, Chicago.
32 Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur Filtered Water, Steam and Formaldehyd Sterilizers and Formaldehyd Disinfection of Rooms. A. Goldspohn, Chicago.
33 Physical Examinations for the United States Army. C. L. Wheaton, Chicago.
34 *Indications for the Surgical Removal of Tonsils and the Best Methods for Doing So. O. J. Stein, Chicago.
35 Intravenous Injections of Mercury as a Therapeutic Test for Syphilis. W. F. Bernart, Chicago.
36 Hemorrhoids. C. J. Drueck, Chicago.
37 Treatment of Abortion and Miscarriage. M. Whise, Chicago.

34. Removal of Tonsils.—Stein believes that the best method of surgical treatment of the tonsils is the one that insures the possibility of the removal of all of the glands. He employs a procedure that combines the best features of two of the oldest and best known methods—namely, dissection and use of the tonsillotome. After the tonsil and the faucial pillars have been anesthetized, the gland is dissected free from its mucus and any fibrous attachment. The important feature of this part of the operation is that the gland must be deeply and firmly engaged in the tenaculum forceps in order to secure a very firm hold on the mass when traction is brought to bear. The traction is at first inward, toward the mouth, downward and backward. This is furthered by a backward rotation of the engaged forceps. The attachments are now all at extreme tension, and with a small sharp bistoury or small curved scissors incision is commenced well up in the epitonsillar fossa and carried down along the anterior edge of the palatoglossal muscle, hugging the capsule and avoiding the muscular fibers. Any posterior attachments are severed in the same manner, but by reversing the rotation of the engaged forceps to a forward position. Special effort should be directed to the liberation of the large mass of the gland found tucked away in the epitonsillar fossa. The fenestra of a Mackenzie pattern tonsillotome is now made to encircle the gland close to its posterior attachment, and while strong traction with the forceps is continued, the blade of the tonsillotome is driven forward, severing at one stroke the remaining portions. In place of the tonsillotome a special pair of curved scissors, or the cold or electric cautery wire loop, may be used with success.

Journal of Cutaneous Diseases, New York.

August.

38 *Treatment of Epithelioma by Means of Caustic Potash. A. Van Harlingen, New York.
39 Length of the Primary Incubation Stage of Syphilis. A. Post, Boston.
40 Arsenic in Pityriasis Rubra Pilaris. M. L. Heidinsfeld, Cincinnati.
41 *Case of Lupus Erythematosus in Early Childhood. J. F. Schamberg, Philadelphia.

38. Treatment of Epithelioma by Caustic Potash.—Van Harlingen records the results he has obtained in the treatment of 55 cases of epithelioma by the use of caustic potash. The ages of the patients ranged between 35 and 94 years. Thirty patients were males and 25 were females. Almost all tumors were located on the face. The left cheek was the seat of the lesion in 10 cases; the left side of the nose in 9 cases; the right side of the nose, the right cheek and the right temporal region, 4 cases of each; left cheek and left temporal region, 3 cases each; left lower eyelid, 3 cases; each ear, 1 case; each side of the upper lip, 1 case. Most of the lesions were quite small, the largest measuring 3 cm. in diameter. In almost all the cases entire reliance was placed on the caustic potash. Occasionally, slight relapses, or what appeared to be such, were treated with one of the mineral acids, formalin, etc. The wounds healed in from ten days to eight weeks, the average duration being four weeks. In the majority of cases so treated, the results were entirely satisfactory. In seven instances, the treatment was unsatisfactory or a complete failure, from several causes. Van Harlingen concludes that cases of epitheliomata of the skin that display small, well-defined pearly lesions, from one-half to 1 or even 2 cm. in diameter, found chiefly on the face and adjacent parts, are best treated by the use of caustic potash. Larger lesions are best treated by the *x*-ray, but here caustic potash may be used to soften and to dissolve the horny epithelium and in some cases as an adjuvant. In cases treated with caustic potash the use of the *x*-ray does not appear to hasten the process of reparation or to modify to any marked degree the cicatrix resulting from cauterization.

41. Lupus Erythematosus in Early Childhood.—The patient referred to by Schamberg was four years and three months old when the disease began. The first lesion appeared on the right cheek in the form of a pimple. This gradually increased in size, and later another lesion appeared on the left cheek. There is no dilatation of sebaceous glandular orifices. The case represents the vascular type of the disease.

Western Medical Review, Lincoln, Neb.

July.

42 *Collateral Circulation, Following Ligation of the Femoral Artery. F. Rustin, Omaha.
43 Neuralgia. F. E. Coulter, Omaha.
44 Intraocular Foreign Bodies. W. M. Cowgill, Lincoln.
45 Surgical Fever. J. M. McLeod, Lincoln.

42. Collateral Circulation Following Ligation of Femoral Artery.—Rustin reports a case of successful ligation of the femoral artery for popliteal aneurism and in which two years later he did a hip-joint amputation for a septic gonorrheal knee. The aneurism was of traumatic origin following a gunshot wound. Two silk ligatures were brought around the femoral artery, about two inches below the profunda and about one-half inch apart. The artery was not cut between the ligatures. For a few days after the operation there was some swelling and edema of the leg and foot; then the leg gradually became normal; the tumor diminished in size and there was every evidence of complete return of circulation below the ligature. As stated, a hip-joint amputation was done two years later. The amputated leg was preserved and the artery injected. The section showed that the main line of circulation was carried on through the anastomosis of the profunda artery, which was very much enlarged. The perforating arteries of the profunda were large and tortuous and anastomosed freely with the ascending branches of the popliteal artery. The external circumflex artery anastomosed freely with the superior articular branch of the popliteal artery. There were few anastomoses between the external circumflex branch of the profunda with the vessels in the gluteal region. Rustin says that at the time of operation he noticed that there were many small vessels, more than are usually encountered in the ordinary hip-joint amputation. The original aneurismal sac was obliterated, and its only remnant was a cord-like mass about four inches long and an eighth of an inch in diameter.

Ohio State Medical Journal, Columbus.
August 15.

46 *Stiff and Painful Shoulders. E. A. Codman, Boston.
47 Syphilis in Relation to Crime. A. Ravogli, Cincinnati.
48 Experience in Treating Diseases of the Lachrymal Duct Without Operation. W. H. Snyder, Toledo.
49 *Case of Extrauterine Gestation; Operation, a Living Child Delivered Weighing Three Pounds. H. T. Sutton Zanesville.
50 Points in the Hygiene and Sanitation of Rearing Children. D. S. Hanson, Cleveland.
51 Address of Welcome Delivered Before the Ohio State Medical Association at Canton, Ohio, May 9, 1906. J. F. Marchand, Canton.
52 Report of the President of the Ohio State Medical Association. T. C. Martin, Cleveland.
53 Cesarean Section—Twin Pregnancy, Multiple Fibroids, Hysterectomy. J. F. Baldwin, Columbus.

46. Stiff and Painful Shoulders.—Under this title Codman considers cases of obscure lesions of the shoulder joint, often called rheumatism, fibrous ankylosis, paralysis of the deltoid, etc., the result of a blow, sudden muscular exertion, pressure, overuse or inaccustomed use. Codman believes that the trouble is due to subdeltoid adhesions and that the logical treatment is breaking up of these adhesions and then preventing their reformation by means of a splint which holds the arm in abduction and external rotation, thus bringing raw surfaces opposite healthy ones. The frame of the splint he uses is made of light iron wire, one-quarter of an inch in diameter and stiff enough to maintain its form and to carry the weight of the arm. Sufficient cotton wadding to thoroughly pad it is bandaged over it, and the whole is covered with cotton or a linen cloth. The splint should be long enough to extend from the axilla to the seat of the chair on which the patient sits. It is best held in position by a belt around the pelvis and a figure of 8 flannel bandage about the shoulder, crossing back of the neck. The pad should be placed on the opposite axilla to prevent excoriation of the skin by the bandage. The splint passes along the under surface of the arm, which is elevated in front of the body on a level with the head and slightly flexed, to the axilla, and then down the side of the chest over the hip to a point where it will just touch the seat of the chair on which the patient sits.

49. Extrauterine Gestation.—Sutton reports an unusual case of this kind. The patient was a primpara, 26 years of age. At three months uterine pains became so severe that the attending physician advised an attempt to empty the uterus, but he failed to deliver the fetus. At six months the same performance was gone through with by another physician, with the same result. At eight months she was taken very ill with pain over the abdomen, nausea, vomiting and great weakness. An extrauterine gestation was diagnosed and an operation advised. The abdominal incision brought into view a ruptured sac with a head presentation. A living child was delivered. A supravaginal hysterectomy was then done and the sac and uterus removed together. The patient died from shock thirty-six hours afterward. The child lived twelve hours. It was perfectly formed and weighed 3 pounds.

American Journal of Urology, New York.
August.

54 American Urological Association. F. C. Valentine, New York.
55 President's Inaugural Address to the New England Urological Society. O. C. Smith, Hartford, Conn.
56 *Sequelæ of Prostatectomy. R. F. O'Neil, Boston.
57 *Results of Prostatectomy. H. Cabot, Boston.
58 Indications, Contraindications and Management of Prostatectomy. C. G. Cumston, Boston.
59 *Sigmate Ureteral Obstruction. A. E. Gallant, New York.
60 Intravesical Operations with the Aid of the Cystoscope. H. Meyer, San Francisco.

56. Sequelæ of Prostatectomy.—O'Neil reviews 115 cases of perineal and 93 cases of suprapubic operation recorded by Proust. Of the perineal operations, 8 patients died, of the remaining 107, 55 cases had some postoperative condition, often several, orchitis occurring 14 times, fistulæ 14 times, of which 5 were temporary, residual urine 20 times. In 10 cases there was marked frequency of urination. In 30 other cases, only 8 of which are included in the 55 because of other conditions, a moderate amount of frequency of urination was present, that is, from two to four times at night and every three hours during the day. The beginning of micturition was given in 66 cases; longest 70 days after operation; shortest 5 days; average 26 days. Of the 93 suprapubic cases, 11 patients died. Of the remaining 82, 12 patients had sequelæ (this includes 2 cases of shock and 1 of hemorrhage), 4 suffered from frequency of urination, 2 from slight residual urine, 1 from abascess, 2 had orchitis, one of thelatter cases proving fatl. Micturition began on an average 17 days after operation, the longest time being 45 days after operation, the shortest three days. By comparing the two series of cases, it is evident that the perineal route is much the more liable to troublesome sequelæ.

57. Results of Prostatectomy.—Cabot uses as a basis for his study the reports of surgeons of experience, who report not less than 14 cases, one year or more after operation. Of 495 patients operated on, 388, or 78 per cent., were cured. The percentage of cures was much greater in the cases of complete retention than in those of incomplete retention; 85 per cent. in the former, and 40 per cent. in the latter.

59. Sigmate Ureteral Obstruction.—Gallant cites the history of a patient suffering from an abdominal tumor, which apparently originated in the pelvis, but proved to be a hydronephrotic kidney induced by prolapse and the subsequent formation and agglutination of an s-shaped flexure of the ureter at its junction with the renal pelvis. Points of interest which came up during the course of the case were (a) the complete restoration of the ureteral caliber as soon as the inflammatory bands were removed; (b) the resumption of secretory function shortly after the kidney was replaced and the ureter freed; (c) the gradual recurrence of obstruction, with infection of the kidney and pelvis; (d) the excellent work of the remaining kidney after the affected kidney had been removed.

The Post-Graduate, New York.
August.

61 A Few Wounds Observed During the Japanese-Russian War. C. Lynch, U. S. Army.
62 *Some Operations of Unusual Interest on Women. A. Brothers, New York.
63 Cases of Hematuria. F. Cabot, New York.
64 African Recurrens. R. Koch, New York.

62. Operations of Interest.—The first case reported by Brothers is one of appendicectomy performed on a woman, pregnant three and a half months, without interrupting pregnancy. The appendix contained three fecal concretions. The second case was one of LeFort's operation for vaginal hernia following hysterectomy in a woman 60 years of age. The result was perfectly satisfactory. In the third case the uterus and vagina were removed *en masse* by vaginal hysterectomy for the cure of prolapsus uteri in a woman 50 years old. The patient recovered. The fourth case was one of perforation of the intestine by a fish bone. The patient, a woman, 60 years old, had apparently been cured two and a half years previously of tuberculous peritonitis by incision and drainage. A sinus leaking during the six months following left her with a ventral hernia. After considerable difficulty the intestines were separated from the anterior abdominal wall and from each other until a large cavity, containing about 8 ounces of a straw-colored liquid, was perforated with the finger. While separating adhesions an ulcer of the intestine presented and projecting from its center was a sharp point which proved to be a fish bone measuring nearly 1¼ inches in length. After depressing and inverting the ulcer its base was drawn together by means of a circular tobacco-pouch suture passed around the margin of the ulcer. To reinforce this suture a few extra Lembert sutures were passed in a second tier, completely burying the first suture. The hernia was treated in the usual manner.

Louisville Monthly Journal of Medicine and Surgery.
August.

65 Louisville's Milk Supply. R. McD. Allen, Lexington.
66 Milk as an Infant Food. R. B. Gilbert, Louisville.
67 Chemistry of Milk. P. F. Barbour, Louisville.
68 Constipation. D. O. Hancock, Henderson.
69 *Veratrum Viride in Eclampsia. J. W. Fletcher, Princeton.
70 *Thoughts on the Symposium on Puerperal Eclampsia. C. G. Thornton, Lebanon.
71 Case of Hyperemesis Gravidarum. E. S. Bramlett, Oxford.

69. Veratrum Virid in Eclampsia.—Fletcher regards veratrum as much of a specific in eclampsia as is quinin in malaria. He administers the veratrum hypodermically in doses of from 15 to 65 minims, depending on the severity of the case. He has also used it with benefit in cases of infantile convulsions,

delirium tremens, pleurisy, pneumonia, sunstroke, gastralgia, enteralgia and other conditions accompanied by spasmodic pain.

70. Venesection in Puerperal Eclampsia.—Thornton advocates venesection, withdrawing at least a quart of blood by actual measurement. He does not think it necessary to inject saline solution because of the ever present edema.

California State Journal of Medicine, San Francisco.

June.

72 President's Address. Thirty-sixth Annual Session of the Medical Society of the State of California. R. F. Roony, Auburn.
73 Abdominal Exploration. C. M. Cooper, San Francisco.
74 Liver Infection from Appendicitis. W. S. Thorne, San Francisco.
75 Football Injuries. R. L. Wilbur, Stanford University.
76 Importance of More Careful Observation of Patients After Operations on the Pelvic Viscera. C. G. Ball, Alameda.
77 General Diseases as a Cause of Diseases of the Eye. W. W. Ward, Woodland.

Physician and Surgeon, Detroit and Ann Arbor.

July.

78 Rural City Milk Supplies and Their Relation to Infant Feeding. Home Modification Versus Laboratory Modification. A. M. Cook and D. M. Cowie, Ann Arbor.
79 Lessons in Laggerrite. J. S. Caulkins.
80 Necrosis of the Mastoid Process. W. J. Benn, Bay City, Mich.

Virginia Medical Semi-Monthly, Richmond.

July 27.

81 Chronic Indigestion. J. E. Walsh, Washington, D. C.
82 Salt Action and Salt Solutions. A. L. Muirhead, Omaha, Neb.
83 Neurasthenia. J. D. Bartram, Ashland, Ky.
84 Tumors of the Intestine. G. P. Latloque, Richmond.
85 Ourselves as Others See Us. J. R. Cook, Fairmont, W. Va.
86 Pathologic Findings and Causation of Eclampsia and Hyperemesis. G. Baughman, Richmond.

August 10.

87 Tuberculosis of the Bladder and a Plea for Early Diagnosis. F. R. Hagner, Washington, D. C.
88 Diagnosis and Treatment of Tuberculous Bone and Joint Lesions, from the General Practitioner's Standpoint: Question of the Responsibility for Deformity. R. T. Taylor, Baltimore.
89 Observations in the Treatment of Continued Fever. A. J. Hetherington, Phoenix, Ariz.
90 Cases of Functional Anuria. C. W. Astrop, Surry, Va.
91 Cancer: Its Cause and Spread. F. A. Butler, Harvard, Neb.
92 Adrenalin Chlorid in Varioin. L. Eliot, Washington, D. C.
93 Compound Fracture of Great Toe and Contusion of Foot Followed by Phlegmonous Erysipelas. D. W. Scott, McDonough, Ga.

American Journal of Surgery, New York.

August.

94 Malignant and Non-Malignant Growths. W. S. Bainbridge, New York.
95 Surgical Treatment of Gonorrhea in Women. J. W. Bovée, Washington, D. C.
96 Sociologic Aspects of Gonococcus Infection. P. A. Morrow, New York.
97 Intussusception. W. L. Estes, South Bethlehem, Pa.
98 Bandage for the Stump After Amputation Through the Thigh. H. M. Hays, New York.

Texas State Journal of Medicine, Ft. Worth.

August.

99 Ocular Manifestations of Nephritis. J. O. McReynolds, Dallas.
100 Symptoms and Diagnosis of Acute Nephritis. R. T. Morris, Houston.
101 Nephritis Complicating Typhoid Fever. J. M. Frazier, Belton.
102 Treatment of Acute Nephritis. J. W. Scott, Houston.
103 Diagnosis and Treatment of Chronic Nephritis. M. M. Scott, Brownwood.
104 Etiology of Acute Nephritis. S. C. Red, Houston.
105 Case of Multiple Sclerosis. G. H. Moody, San Antonio.

Albany Medical Annals.

August.

106 An Address to the Graduating Class of St. Peter's Hospital Training School for Nurses. H. Hun, Albany.
107 Etiology and Treatment of Hemorrhoids; a Review. D. C. Moriarta, Saratoga Springs, N. Y.
108 Sanitary Department of Armies and the Military Medical Officer. J. V. R. Hoff, U. S. Army.
109 Victims of the Medicis and the Borgias in France from a Medical Standpoint. C. G. Cumston, Boston.

Mississippi Medical Monthly, Vicksburg.

August.

110 The Physician and Some of His Duties. J. W. Henderson, Lyon.
111 Benefits to be Derived from a Well-Organized Country Society. A. C. Norman, Cato.
112 Light Rays. J. W. Unger, West Point.
113 The State of Alkaloidal Medicine Versus the Old Galenical Preparations. F. E. Lee, Aberdeen.
114 Tuberculosis. W. A. Cox, Pascagoula.

Buffalo Medical Journal.

August.

115 Address to the Graduates in Medicine, Law, Dentistry and Pharmacy, at the Sixtieth Annual Commencement of the University of Buffalo, N. Y., June 1, 1906. E. N. Brush, Baltimore.
116 Story of the Discovery of the Circulation. R. Park, Buffalo.
117 Some of the Leading Men and Events in the History of American Medicine. F. Thoma, Buffalo.

Maryland Medical Journal, Baltimore.

August.

118 Report of the Women's Venereal Department of the Johns Hopkins Hospital Dispensary. F. Pollock, Baltimore.

Journal of the Medical Society of New Jersey, Orange.

August.

119 Nutrition During the First Year. H. L. Coit, Newark.
120 Digestion of Fats, Protelds and Carbohydrates in the First Year. J. F. Bell, Englewood.
121 Suitable Diet During the Second Year. M. P. Brewster, Grantwood.
122 Second Year Disorders of Infantile Digestion. A. McAlister, Camden.

Kentucky Medical Journal, Louisville.

August.

123 Acute Meningitis. J. H. Souther, Three Forks.
124 Cerebral Thrombosis. D. A. Campbell, Bowling Green.
125 Fractures of the Humerus. G. A. Hendon, Louisville.
126 "Patent" and "Proprietary" Remedies. H. H. Roberts, Lexington.

The Alienist and Neurologist, St. Louis, Mo.

August.

127 Adolescent Insanity (Dementia Praecox). E. Trommer, Hamburg.
128 Training of Mentally Defective Children. M. W. Barr, Elwyn, Pa.
129 Psychoencephalonasthenia or Cerebrasthenia Simplex, and Psychoencephalonasthenia or Cerebrasthenia Insanicns. C. H. Hughes, St. Louis.
130 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. (To be continued.) J. G. Kiernan, Chicago.
131 A Case of Reflex Epilepsy. C. E. Ingbert, Independence, Iowa.
132 Erotic Symbolism. (To be continued.) H. Ellis, Carbis Water, Lelant, Cornwall England.
133 A Morphiumaniac on Trial for Murder. A Medicolegal Study of the Matthews Case. T. D. Crothers, Hartford, Conn.
134 Sadism. D. S. Booth, St. Louis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 4.

1 Development of the Treatment of Uterine Fibromyomata within the Last Twenty-five years. F. W. N. Haultain.
2 *Dysmenorrhea. A. Routh.
3 *Series of Fifty Consecutive Abdominal Sections. R. P. R. Lyle.
4 *Obstetric Experiences. J. Lindsay.
5 Evaporation of Chloroform During Inhalation. A. G. Levy.
6 Landry's Paralysis. E. MacNamara and J. Bernstein.
7 *Case of Abdominal Fissure. H. Stevenson.
8 Ascaris Lumbricoides as Cause of Appendicitis. A. Castellani.

2. Dysmenorrhea.—In the treatment of dysmenorrhea due to anemia, Routh has found the following an excellent prescription to be taken, after food, three times daily:

R.	Liq. ammoniæ acetatis	3ii	8
	Ferri et ammoniæ citratis	gr. vii	5
	Tr. columbæ	Mxxx	2
	Liq. potass. arsenicalis	Mlii	2
	Magnesii sulph. q. s.		
	Aquæ chloroformi ad	3i	30
M.	Fiat haustus.		

A week before the period is due, ten grains of bromid of potassium may be added to this combination, or salicylate of soda, if a rheumatic tendency is present. For the relief of pain Routh has found the following very serviceable:

R.	Tinct. cardamomi co.	3ss	2
	Tinct. zingiberis fort.	Mc	3
	Liq. ammoniæ acetatis	3iv	16
	Antipyrini	gr. v	3
	Potassii bromid	gr. xv	1
	Aquæ carvophylli ad	3i	30
M.	Fiat haustus.		

A dose of this is to be taken when the pain is present, and repeated, if need be, in two hours. If stronger sedatives are required, a cachet containing three grains each of antipyrin, phenacetin and citrate of caffein has been found to answer better than larger doses of the same drugs separately. If the extremities are cold, or if the patient feels chilly, prompt relief may be afforded by the inhalation of amyl nitrate (3

minims), or by taking nitroglycerin (grain 1/100). In congestive dysmenorrhea, where the anti-spasmodics fail, extract of cannabis indica (grain 1/3) or a combination of hydrastis, belladonna and bromid of potassium or sodium afford prompt relief. In cases of pelvic congestion with cold extremities and cold skin, Routh has found nitroglycerin to be remarkably effective. Ten grains of the compound powder of ipecac, combined with 30 grains of bromid of potassium, is often very useful if the patient is seen towards night time. Hot douches, local applications of iodin, glycerin tampons, gelatin pessaries, and assuming the genu-pectoral position for ten minutes at bedtime, are also useful means of emptying the pelvis of venous blood.

3. Fifty Consecutive Abdominal Sections.—Lyle reports 50 consecutive abdominal sections performed in an ordinary attic of a small (six beds) hospital, under the most restricted conditions and with the simplest technic. Every possible precaution was taken to avoid sepsis or shock. There was only one death.

The following operations were performed: Ovariotomy, 17; supravaginal hysterectomy, 8; salpingectomy, 5; salpingo-ovariectomy, 4; enucleation of broad ligament cyst, 4; ciliotomy, 4; myomectomy, 3; ventrofixation, 3; panhysterectomy, 2. Six patients operated on for rupture ectopic gestation made uninterrupted recoveries. The one patient who died had a suppurating multilocular ovarian cyst with purulent peritonitis. Lyle concludes that his good results may be ascribed to a correct diagnosis, simplicity in technic, use of few instruments and appliances, limitation of size of abdominal incision, correct adjustment of all cut peritoneal surfaces, complete closure of the abdominal cavity without any drainage, and the free use of normal saline solution in cases in which purulent material is accidentally spilled in the pelvis or abdomen during the performance of an operation.

4. Obstetric Experiences.—Lindsay discusses his experiences with 5,845 cases of labor distributed over a period of 47 years. These cases occurred in his own practice, although about half of the number were in charge of his assistants. More than half of the deliveries were conducted with the patient on her knees, holding on by a chair, the woman refusing to go to bed. No use was made of antiseptics, except an antiseptic oil or grease for the finger, hand or instruments. The most careful asepsis was insisted on. There was no shaving of the parts, no washing, no syringing. Lindsay did all his work without uncovering the patient, except when using instruments or when anything unusual arose. During his first ten years of practice, when antiseptics had no place in the obstetric bag, he did not have a death. His first death was the result of puerperal fever, imported by a nurse. Among this total number of cases there were 2,309 forceps cases; 19 cases of version; 12 cases of placenta prævia; 13 cord presentations; 40 breech or feet presentations; 71 cases of twins; 3 cases of triplets; 52 occipito-posterior presentations; 13 face presentations; 2 cases of inversion of the uterus; 2 cases of hydatidiform mole; 8 monstrosities; 126 premature births; 3 cases of rupture of the uterus; and 5 cases of indentation of the frontal bone, due to forceps delivery.

There were 28 deaths in this series of cases, only one being the result of puerperal fever. Other causes of death were erysipelas, pneumonia, measles, phlebitis, peritonitis, convulsions and embolism. In the entire series there were only 6 cases of rupture of the perineum; none were complete.

7. Fissure of Abdominal Wall.—The subject of the report made by Stevenson was a seven to eight months' premature female child, first seen about two hours after birth. A large mass of bowel lay exposed outside of the abdomen without peritoneal or other covering. It consisted of all the large intestine and several inches of the small, with a patent Meckel's diverticulum about two inches in length. The fissure was between one and two inches in length. Stevenson removed the diverticulum flush with the bowel and closed the fissure. The child rallied well from the operation. The stitches were removed on the fifth day, when everything seemed well. On the sixth day the child became jaundiced and the evening of the eighth day it died.

The Lancet, London.

August 4.

9 Pathology of Skin Diseases. G. S. Woodhead.
10 Removal of a Cerebral Tumor (Endothelioma) which had Invaded the Overlying Cranial Bone. H. G. Barling.
11 *Blood Pressure and Pigmentation in Addison's Disease. A. R. Short.
12 Appointment of Qualified Women with Special Reference to the Hygiene and Feeding of Infants. J. S. Cameron.
13 Caterpillar Rash. J. C. Thresh.
14 Some of the Pseudo-Parasites of Cancer. A. S. Grunbaum.
15 *Case of Acute Rheumatism; Hyperpyrexia; Recovery. E. B. Smith.
16 *Treatment of Catarrhal and Gangrenous Dysentery. C. B. S. Amos.

11. Addison's Disease.—Short summarizes his paper as follows: 1. The symptoms of Addison's disease are due to vasomotor paralysis. This is due to absence of adrenalin, the normal excitant of the sympathetic nerve endings, from the blood. 2. The pigmentation is due to vascular relaxation of the skin causing exaggerated functional activity of the pigment cells. 3. The most promising line of treatment, on theoretical grounds, is the administration of vasoconstrictors of prolonged action; digitalin has given good results in one case.

15. Hyperpyrexia in Rheumatism.—The highest temperature, by rectum, in the case reported by Smith was 109.3; highest mouth temperature, 107.2. Cold baths were employed to reduce the temperature, and to these is ascribed the recovery of the patient.

16. Treatment of Dysentery.—Amos has had very satisfactory results in the treatment of dysentery from the employment of Manson's method of administering ipecac, associated with the following diet: All his patients are Africans, Asiatics, or Turks, and nearly all of them evince a very great repugnance to milk diet, frequently starving themselves for days rather than take it. Moreover, unless the milk is greatly diluted, hard curds constantly appear in the patients' stools. He has therefore abandoned a fluid diet in all cases of dysentery and has had recourse to a drier diet which the patients relish and take readily, even when in a most serious condition. They receive half a pint of milk at 7 a. m., when those without hemorrhage also have a small piece of bread; at 11 a. m. a plate of finely mashed rice, potatoes, lentils, macaroni, or beans, over which a little meat soup has been poured, is served. Convalescents also have a small piece of bread. At 5:30 p. m. they have a similar meal. During the night they have a pint of milk diluted with water to the patient's liking. Those who are very weak have in addition each day the whites of four eggs beaten up with brandy or water. The yelks of eggs they can not digest. No pure water is given, but a 1 in 3,000 solution of lactic acid is placed at the bedside for them to sip at will. With this dietary blackened tongues become moist and clean in one or two days, thirst disappears, no undigested food appears in the stools, and no difficulty is found in inducing the patients to take nourishment.

Indian Medical Gazette, Calcutta.

June.

17 Extraction of the Lens in Its Capsule; an Experience of 311 Cases, and a Method of Recording Cases. G. T. Birdwood.
18 Irrigation in Cataract Extraction. R. H. Elliott.
19 *Practical Points About Vaccine Lymph. J. Entrican.
20 *Value of Revaccination. R. D. Macgregor.
21 Splenic Abscess in a Malarial Liver. A. R. S. Anderson.
22 Cysticercus Cellulosæ of Tongue, with a Note on the Helminthology of One of the Madras Jails. C. L. Williams.

19. Practical Points About Vaccine Lymph.—Enterican describes an apparatus by means of which it is possible to fill hundreds of capillary tubes with vaccine lymph at one time with a great saving of lymph. The apparatus has been in use for over a year and has stood the test of time and experience.

20. Value of Revaccination.—This subject has been made one of careful study by Macgregor, and as a result of his work he draws the following conclusions: In adults not previously revaccinated the greater number are successful on revaccination, though this majority is not large. One previous revaccination, whether successful or not, renders the chances equal of a second revaccination succeeding or otherwise. In case of two previous revaccinations, successful or otherwise, success at a third revaccination is improbable. The period of life at which revaccination is more likely to succeed is before the age of 25 years. Those with good scars are much more likely to take on revaccination than those with poor scars.

Intercolonial Medical Journal of Australasia.

June.

23 Alcohol as a Beverage. J. W. Springthorpe, Melbourne.
24 Alcohol in Children's Diseases. A. J. Wood.
25 Effect of Alcohol on the Throat and Voice. C. L. M. Iredell.
26 Brachioplegia of Cerebellar Type and Rhythmical Tremor, with an Attempt to Explain the Symptoms and to Localize the Lesions. H. C. Maudsley.
27 Laryngeal Diphtheria in an Infant. R. Huckell.
28 Hematemesis in Typhoid Fever. S. W. Ferguson.
29 Intestinal Obstruction by a Band Eighteen Months After Appendicectomy. R. A. Stirling.

The Australasian Medical Gazette, Sydney.

June.

30 Hydrorrhœa Gravidarum. A. Austin.
31 Clinical Value of Accurate Estimation of Blood Pressure. S. Gillies.
32 *Foreign Body Retained in Orbit for Nearly Four Years. F. A. Pockley.
33 Causes of Cancer. J. B. Cleland, Sydney.
34 Leptothrix. W. J. Munro.
35 Exophthalmic Goiter. W. T. Chenhall.
36 Vasodilatation in Hemoptysis. E. T. Smith.

32. **Foreign Body in Orbit.**—Pockley reports rather a curious case. A boy, while playing at school, was knocked against a wooden fence and immediately afterward pulled a splinter of hard wood out of his right eye. As soon as he recovered from the concussion he discovered that he had no perception of light in that eye and that the ball was protruded somewhat. There was tenderness on pressure in the orbit below the eye, but not elsewhere. An incision was made through the conjunctiva, midway between the inferior oblique and inferior rectus, and a hard wood splinter three-quarters of an inch long was withdrawn. Careful probing revealed no other foreign body. The disc of that eye eventually passed into a condition of white atrophy, the eye being normal in position and range of movement. There was no pain or tenderness. Four years afterward, on awakening in the morning, the boy found sticking out of the corner of his eye a piece of wood one and on-equarter inches in length, and one-eighth inch in thickness. There had been no pain or swelling previously and nothing had been noticed when the boy went to bed the night before.

Semaine Médicale, Paris.

37 (XXVI, No. 29.) *Le fonctionnement du service de santé de l'armée japonaise pendant la guerre russo-japonaise de 1904-1905. Koike (medical inspector general of Japanese armies).
38 (No. 30.) *Le pseudo-rétrécissement mitral fonctionnel (false mitral stenosis). L. Bard.
39 La désinfection est-elle une mesure efficace pour reduire la morbidité des maladies transmissibles.
40 (No. 31.) *L'origine rénale de l'hypertension artérielle permanente. Ambard.
41 New Degree of "Superior Medical Studies."—Réformes dans la mode de recrutement des agrégés des Facultés et des professeurs des Ecoles de médecine en France. See editorial, page 587.

37. **Sanitary Conditions in Japanese Army.**—This official communication from the medical inspector general of the Japanese armies describes the principles followed and the results obtained in the effort to keep the soldiers in good health. It concludes with the proud statement: "If it can be said that the Russo-Japanese war has no precedent in history in modern times in regard to its extent and its importance, it may be said with equal truth that our sanitary institutions won an equally unique victory." The mortality from disease was only a third of that from wounds. Beriberi was the cause of 25 per cent. of all the admissions from disease to the hospitals. The percentage of wounded was about 14.58 per cent. of the total active force. Smallpox, typhoid fever and dysentery reign in Manchuria nearly all the year, and as the soldiers were quartered by preference in the Chinese houses, the danger of infection was great. To attenuate this danger physicians were sent in advance of the troops and every available house and family were examined in order to recognize the contaminated and to exclude such houses from the occupancy of the troops, while the sick persons encountered were given careful treatment. A portable apparatus for steam sterilization of clothing and blankets was extensively used, and with excellent results. No injections of serum for typhoid fever dysentery, cholera or plague were made, as their effects are not always constant and with such an extensive battle line it would have been impossible always to wait for the febrile reaction. Each hospital ship had its own steam sterilizing plant, and each hospital train was carefully cleaned and disinfected each time after unloading.

38. **False Mitral Stenosis.**—Bard reviews the points useful for the differentiation of true from false mitral stenosis. The latter should be suggested by the occurrence of the signs in young chlorotic girls or nervous individuals. On the other hand, the presence of infantilism or tardy development should suggest the possibility of organic defect. An important differentiating point is what he calls the "vibration clôturale," that is, the changes in the audible vibration as the valve closes, the normal vibration being modified by the rigidity and induration of the valve in case of organic defect. This "clotural vibration" is plainer to the palpating hand than the modifications in the sounds to the ear. It is not affected materially by arrhythmia or tachycardia, which are liable to arrest the thrill. The exaggeration of mitral vibration from mere hyperfunction, without organic changes, is revealed by a wide, diffuse vibration without any localizable maximum, while it is scarcely attenuated by the interposed hands, and is exactly proportional to the extensive shaking of the wall over the heart. With organic changes there is more localized vibration; it has a deeper, more acute character, with little if any shaking of the wall. There can be no confusion between these two types except in case of pronounced palpitations and exaggerated functioning masking the character of the vibration. By waiting for a period of calm, the characteristics of the hard vibration may be detected. In false mitral stenosis the thrill is discerned, but the hard "clotural vibration" is absent, and this absence renders the significance of the thrill somewhat dubious. Differentiation is possible only by careful study of all the usual signs, but the special characteristics of the audible mitral vibration are of especial importance in this respect.

40. **Renal Origin of Permanent Arterial Hypertension.**—Ambard reviews the various types of arterial hypertension and the mechanism of its production. He is convinced that an exclusively mechanical hampering of the kidney secretion is the cause of the various types of exaggerated arterial tension encountered in the course of nephritis. When this mechanical hampering is variable, the arterial tension varies with it, and when it is invariable the hypertension is invariable. The variable effects of the retention of salt in the different types of nephritis are like an experimental demonstration of the part played by the kidney in the production of arterial hypertension. The fact that primary arterial hypertension seems to exist in certain cases is due to the presence of an unsuspected nephritis not accompanied by albuminuria, revealing its presence only by this mechanical interference with the kidney secreting function. It may be compensated by the increased arterial tension so perfectly that the existence of the nephritis is rendered dubious. Careful investigation of the permeability of the kidneys and autopsy of individuals of this category, dying accidentally, reveal the latent nephritis. In conclusion he remarks that the more one examines in detail these cases of permanent hypertension, the more convincing are the findings to the effect that there can be no permanent arterial hypertension without nephritis.

Berliner klinische Wochenschrift.

42 (XLIII, No. 22.) *Pyurie durch Leukocytose; Leukocytose-Präme. S. Talma (Utrecht).
43 *Precipitins of Cow's Milk in Infant's Blood.—Ueber den Nachweis der präcipitablen Substanz der Kuhmilch im Blute atrophischer Säuglinge. J. Bauer.
44 *Ist Hysterie eine Nervenkrankheit? P. Kronthal.
45 *Ueber Schleimhaut-Lupus der oberen Luftwege. [illegible]
46 *Functional Treatment of Fractures.—Die funktione[illegible]e Behandlung der Knochenbrüche. C. Deutschländer. (Concluded.)
47 *Beiträge zur Chlorose und ihrer Behandlung. H. Bach. (Concluded.)
48 *Zur Therapie der harnsäuren Diathese (uric-acid diathesis). Grimm.
49 Physical Laws and Influence of Mineral Waters on Stomach Functions.—Können wir den Einfluss der Mineralwässer auf die Magenfunktion auf Grund physikalischer Gesetze erklären? B. Tausz.

42. **Pyuria Without Suppurative Processes.**—Talma describes 2 cases in which pus cells were found in the blood and urine

without a suppurative process being discovered anywhere in the body at autopsy. Large numbers of polynuclear leucocytes were found in the urine, and pus was discovered in small amounts in nearly all the organs, but without any local suppuration anywhere. The kidneys were perfectly sound in appearance. The pyuria was induced solely by leucocytosis in both cases reported, favored possibly by exaggerated permeability of the vessel walls. The patients were men 34 and 59 years old. The second patient had a small contracted kidney and chronic tuberculous lung lesions, but no suppurating process.

43. **Precipitins of Cow's Milk Found in Infant's Blood.**—Bauer was able to detect by the biologic hemolytic test the presence of cow milk precipitin in the blood of an infant suffering from severe atrophy. The toxic action of a foreign albumin has long been established, and this may have been the cause of the severe atrophy. The test was made with progressively smaller amounts of the human serum, plus 0.03 c.c. of the precipitating rabbit serum, plus 0.4 c.c. of fresh goat serum, the whole kept at 37 C. for an hour and a half. Then 1 c.c. of a 5 per cent. suspension of sensitized corpuscles from goat blood was added.

44. **Definition of Hysteria.**—Kronthal argues that hysteria can not be regarded as a nervous affection. It is the varying morbid reaction of the cells constituting the individual. Treatment should aim to influence the morbidly reacting cells by changing the environment and by strengthening the cells—the benefit from which has long been established empirically.

45. **Lupus of the Mucosa of Upper Air Passages.**—Senator has had occasion to observe 35 cases of lupus of the face in which the affection involved the mucosa of the upper air passages. In 22 the affection had commenced before the age of 25. Treatment of these comparatively inaccessible regions is by curetting into sound tissue, and examining the patient every three or four weeks to remove any foci overlooked or recurring. A 50 per cent. solution of lactic acid may be found useful when for any reason it is impossible to use the curette. Treatment with direct sunshine might be advisable for laryngeal lupus according to Sorgo's successful technic.

46. **Functional Treatment of Fractures.**—Deutschländer rejects immobilization and sparing the limb after a fracture as an irrational and harmful method of treatment. On the contrary, he preaches that the natural healing processes are promoted and hastened by functional use of the limb from the start. Massage is a subordinate aid. The functional use of the limb, however, must be guided, as not all movements are beneficial. Those only must be allowed which correspond to the pathologic conditions and the mechanism of the parts. The novice in this method should commence with treatment of fractures of the finger phalanges. The functional technic is particularly effectual in case of fractures of joints. The results in 73 workingmen with fractures of the arms, treated by this functional technic, were that the fracture healed in 67 without impairing in the least the working capacity. The working capacity was impaired permanently about 50 per cent. in 2; about 40 per cent. in 2, and 10 per cent. in 2. Nearly 30 of these patients were over 40. He uses adjustable and removable immobilizing appliances, but always with a view to the functional use of the parts. The Bardenheuer extension treatment is a kind of functional therapy. He follows Hoffa's directions in regard to massage which must not be left to lay hands in case of fractures. The exercises of the limb must be slow and systematic and adapted to the individual conditions, use [illegible] with slight traction on the fractured limb. The movements may describe quite wide excursions, but they must not be abrupt nor excessive, and must never injure the new tissues forming in the process of repair. Both during the massage and the exercises the fragments must be fixed in the position in which healing is desired, with at the same time slight correcting pressure on them.

47. **Treatment of Chlorosis.**—Bach found gastric hypoacidity is only a small proportion of 224 cases of primary chlorosis. The acidity declined under treatment with iron. He gives the tabulated findings in 11 cases under iron treatment.

48. **Uric Acid Diathesis.**—Grimm ascribes the deposits of urates to the peculiarly low standard temperature of individuals exhibiting signs of the uric acid diathesis. Some of his patients have permanently a temperature in the axilla of 35.8 C. The low temperature of the blood prevents the proper dissolving of the uric acid in the blood, and urates are deposited at the points where the temperature is constantly lowest, that is in the ears, hands, feet and joints. This assumption suggests an explanation for the rarity of gout in tropical regions. The metabolism is sluggish, and on account of this sluggish metabolism the uric acid is precipitated at various points in the body. Treatment should aim to stimulate metabolism, and he has found the Sauerbrunn mineral waters remarkably effectual in such cases. He has tested the dissolving action of these waters a hundred times by placing a number of small kidney stones in urine from a uric acid patient. He weighed the stones before and after leaving them in the urine for a day or two. The patient then ingested a quart or three pints of the Sauerbrunn waters daily and the test with the kidney stones was repeated. They were found to lose constantly in weight in the urine voided under the influence of the mineral water. Five small stones in one instance, weighing 45 mg., weighed only 28 mg. after three days in the urine, rendered strongly alkaline by drinking the Sauerbrunn waters. One of the stones crumbled to pieces. In treating the acute attack, warmth only should be allowed. With the Sauerbrunn waters, hydrotherapy, exercise and superheated air, he claims that even the oldest cases of uric acid diathesis can be improved and in many instances cured.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

50 (XXXII, No. 27.) Prevention and Treatment of Alopecia of Various Etiology.—Verhütung und Bekämpfung der Kahlheit. O. Lassar. Clinical lecture.

51 *Zur Frage der Entstehung der Lungen-Tuberculose (origin). A. Schlossmann and St. Engel.

52 Ueber Untersuchungen der Nasenrachenhöhle gesunder Menschen auf Meningococcen (in healthy throats). K. Kutscher.

53 Ueber die Flagellaten-Form des tropischen Malaria-Parasiten. F. C. Wellman.

54 Substitute for "Four Cell Bath."—Ueber einen wirklichen Ersatz des Vierzellenbades. Boruttau (Göttingen).

55 *Behandlung des Caput obstipum. H. Doering.

56 Negative Action of Antistreptococcus Serum.—Wirkung des Antistreptococcen-Serums. W. Zangemeister.

57 *Ueber Gonosan und Gonorrhoe-Therapie. C. Schindler and C. Siebert.

58 Kartoffel-Speisen für Diabetes und Adipositas (potatoes in diet). W. Sternberg.

59 Power for Physician's Automobile.—Motorstärke des Aerzte-Kraftwagen. Sänger.

51. **Origin of Pulmonary Tuberculosis.**—Schlossmann and Engel make out a strong case in support of the assumption that tubercle bacilli ingested are taken up into the system by the same route as particles of food. The mesenteric glands are used to the passage through them of corpuscular elements, droplets of fat, etc., and their behavior during digestion indicates that they differ functionally from the other lymph glands in the body. The bacilli entering the mesenteric glands are passed along to the thoracic duct, and from here they can readily infect the lungs and bronchi. Ingested bacilli are able to pass through the intact intestinal wall, through the glands and into the thoracic duct as readily and as rapidly as the food particles follow the same route. The authors found the tubercle bacilli in the lungs in young guinea-pigs a few hours after the bacilli had been administered in milk. Tuberculosis should be regarded as a "children's disease," in so far as its inception almost invariably occurs during childhood, although its manifestations frequently do not appear until later. Contracted pelvis causes no disturbances until the child-bearing age, and yet it is the result of a rachitic process in youth. The practical conclusions of the article are urgent appeals for the prevention and cure of tuberculosis in childhood. By strengthening the child's organism it becomes able to conquer the existing disease and develop an effectual immunity.

55. **Treatment of Wryneck.**—Doering describes the operative measures that have been successfully followed in 35 cases of congenital torticollis. Simple open tenotomy is the standard technic and the results are even better than with more complicated procedures. In 32 of the cases, including a number of severe ones, the cure was complete and permanent.

57. **Gonosan and Treatment of Gonorrhea.**—Schindler and Siebert comment on the extensively advertised drugs for internal treatment of gonorrhea, referring especially to gonosan. They assert that such drugs are dangerous, as they have a tendency to supplant the essential and indispensable local treatment. If it were not for this, they remark, "the manufacturing chemists and the charlatans—whose ranks include many apothecaries, unfortunately—might be left in peace to profit by the sale of this convenient and consequently popular method of treating gonorrhea." "But," they add, "internal treatment of gonorrhea is not effectual. Extensive tests and experiments at Neisser's clinic have demonstrated the absolute worthlessness of any treatment not strictly antibacterial, especially internal treatment. Gonosan has been subjected lately to special tests which have established that its internal administration does not affect the gonococci in any way and hence has no influence on the course of the disease." After taking 10 capsules of gonosan a day for three days they mixed 1 c.c. of the urine on the third day with a suspension of gonococci. Even under these extremely favorable conditions the gonosan urine did not have the slightest inhibiting effect on the growth of the gonococci in the test tube. Local tests of the gonosan showed that it was far less bactericidal than the silver salts, oxycyanid of mercury or ichthyol. They query therefore, why, if gonosan has no favorable influence whatever on gonorrhea, either internally or externally, that is, does not kill the gonococci or inhibit their growth, why has it happened that, notwithstanding this, gonosan has met with such a cordial reception on the part of many physicians? They ascribe this, first, to the fact that it is much more convenient to prescribe capsules internally than to apply effectual local treatment, and secondly, to the fact that many physicians still cling to the delusion that if the symptoms, the pain, smarting and discharge can be banished in the early stages, the disease is cured. And yet countless experiences have shown that the gonococci still lurk in the parts. It is the practice at Neisser's clinic to refrain from arresting the discharge at once, as otherwise the patient thinks he is cured and grows careless. Neisser prefers freshly prepared solutions of a silver salt for the local treatment, commenced at the earliest possible moment. If this does not always accomplish the desired result the trouble is generally in the inadequate technic on the part of the patients, and, unfortunately, on the part of some physicians. Everything claimed for the action of gonosan is uncertain and inconstant, while good results are invariably obtained by an early, energetic course of local treatment.

Münchener medizinische Wochenschrift.

60 (LIII, No. 23.) Ueber Cholera- und Typhus-Endotoxine. M Hahn.

61 *Study of Bier's Congestive Hyperemia from Standpoint of Endotoxin Theory.—Die Biersche Stauungshyperämie vom Standpunkt der Endotoxinlehre. A. Wolff-Eisner (Senator's clinic, Berlin).

62 Verfahren zur Verminderung der Infectionsmöglichkeit bei Operationen in der Bauchhöhle (to reduce possibility of infection in abdominal surgery). A. Theilhaber.

63 *Measurement of Blood Pressure.—Ueber Blutdruckmessungen. T. Schilling.

64 *Zur Behandlung der Prostata-Hypertrophie. Rörig II.

65 *Pregnancy and Laryngeal Tuberculosis.—Schwangerschaft und Kehlkopftub. Levinger.

66 *Case of Permanent Spinal Paralysis After Spinal Anesthesia. —Bleibende Rückenmarkslähmung nach Lumbalanästhesie. Fritz König (Altona).

67 Two Cases of Left Abducent Paralysis After Spinal Anesthesia.—Zwei Fälle von linksseitiger Abduzenslähmung nach Rückenmarksanästhesie. P. Roeder (Israel's clinic, Berlin).

68 *Zur Kasuistik der Polycythämie, zugleich ein Beitrag zur Aetiologie der Migraine ophthalmique. G. Köster. (Concluded.)

61. **Congestive Hyperemia from Standpoint of Endotoxin Theory.**—The results of experimental research harmonize with the clinical phenomena observed and emphasize the fact that the proper indications for the application of Bier's congestive hyperemia are the same as for the bactericidal serums. Wolff-Eisner reviews them in detail. The congestive hyperemia has the advantage over the serums that the evacuation of the endotoxins can be easily secured by incision. This evacuation is indispensable, and it is a mistake to suppose that the congestive hyperemia takes the place of surgical measures except in the very mildest cases. Lexer has shown that the congestive hyperemia causes destruction of some of the bacteria and consequent liberation of endotoxins, but the bacteriolysis is not complete, and some bacilli are proliferating while others are being destroyed. Unless an ample outlet is maintained for the escape of the endotoxins, the measure does more harm than good. But if free escape is provided, then the conditions are remarkably favorable for rapid healing. Wolff-Eisner remarks in addition to the above, that bacteriology and immunization and their problems should not be left exclusively to the theorizers, but should be taken into the clinic. They will there yield valuable fruits and the clinic in turn will render them of greater use. Modern clinical institutes should be equipped for such work with medical men trained in it and able to interpret the phenomena observed. This would prevent the blind and wasteful use of expensive serums on patients without the proper indications. The endotoxin theory is destined, he thinks, to play a most important part not only in the study of the origin of the disease, but also in its prevention and cure.

63. **Measurement of the Blood Pressure.**—Schilling expatiates on the great difference in the results observed when the constricting band is wide. He advises the use of a band 12 cm. wide, which gives much more accurate findings. The normal range is found to be less extensive than when a narrow band is used. With the Riva-Rocci and the 12 cm. band the blood pressure of the healthy adult ranged only from 110 to 125 mm. The average in 100 men was 118.1 mm. In 1,000 tests on 350 persons he found that instrumental measurement alone is reliable. Notwithstanding his wide experience, in estimating the blood pressure without the instrument, he frequently found that his impressions were far from the truth when the results were compared with those registered by the instrument. In many cases the blood pressure findings were the only clue to effectual treatment. He has sometimes derived great benefit from digitalis in cases with high pressure, the general health improving as the blood pressure dropped. As a rule, however, it is only a symptom and does not need to be treated separately. Krehl has recently pointed out that it may be merely a means of defense on the part of the organism in some cases.

64. **Treatment of Hypertrophy of the Prostate.**—Rörig has performed the Bottini operation in 203 cases, and has had only one mishap and one death in this series. The one patient who died succumbed to the results of uremic intoxication a few weeks after the operation. Rörig is an earnest advocate of the Bottini operation, believing that it should be the standard and that resection or excision of the prostate should be reserved for exceptional cases. His results are a complete cure in 47 out of 51 cases of chronic, absolute retention, that is, in 92 per cent., with 1 patient improved. In 132 cases of chronic, relative retention of urine, acute, intermittent retention, tenesmus and difficulty in catheterizing, 83 patients, 62 per cent., were completely cured, while 34 per cent. were much improved, and no result was obtained in 3, that is, in 2.27 per cent. In 20 cases of slight hypertrophy, 9 patients were improved and no effect could be discovered in the 11 others. He has never had recurrence in any of his cases. He always operates with the patient standing erect. He inflates the cleansed bladder with air, introduces the apparatus, hooks it in and allows the air to escape. When the patient states that he feels a desire to urinate, the knife is sprung back into its sheath, under 50 amperes, and air is injected again, after which the operation is continued. He then instills 10 c.c. of a 1 per cent. silver nitrate solution and has the patient lie down. In case of much congestion he leaves a catheter in the bladder. The prostate presents in such a way with the patient standing that a single cut is sometimes sufficient. He never operates under general anesthesia, as the bladder walls are liable to relax and the prostate to alter its shape. He ascribes to the chloroform anesthesia most of his failures, as in these he happened to operate under general anesthesia. A second operation later without chloroform soon rendered the cure complete.

65. Evil Effect of Pregnancy on Laryngeal Tuberculosis.—Levinger's opinion as to the injury from a pregnancy in case of laryngeal tuberculosis has been amply confirmed by his experience in 3 cases. In the first the woman died from the rapid progress of the laryngeal affection about two weeks after she had been delivered of an apparently healthy child. With the exception of hoarseness for two years (no laryngologic examination), there had been no indications of a throat trouble until after delivery, when an attack of suffocation and fever led to the discovery of the tuberculous tumor in the throat and lesions in the lungs. The patient did not survive excision more than a week or so, succumbing to hemoptysis. In a second case Levinger delivered the patient at the end of the fifth month on account of aggravation of a throat and pulmonary tuberculous affection as the pregnancy progressed. The patient bore the operation well, as also excision of the tuberculous tumor in the throat, and has since been in comparatively good health. In a third patient the deleterious influence of the pregnancy was likewise unmistakable.

66. Permanent Paralysis After Spinal Anesthesia.—König's patient was a man of 35, who fell, while drunk, and fractured the patella. A week later the patella was sutured under stovain spinal anesthesia, about 0.06 gm. stovain being mixed with the patient's own cerebrospinal fluid, which was then reinjected between the third and fourth lumbar vertebræ. In less than fifteen minutes there was complete anesthesia to the umbilicus, but none of the functions of the parts below the umbilicus returned; bladder, rectum and legs were entirely paralyzed, the motor and sensory functions, and the tendon and cutaneous reflexes were alike abolished. The entire region below the seventh dorsal vertebra was as dead as after a total lesion of the spinal cord, and after the usual sequence of cystitis and decubitus, death occurred in a little more than three months. Headache, nausea and fever had also been observed. The paralysis was complete from the very first, which speaks against an infectious origin. Autopsy showed the spinal cord adherent to the dura below the ninth vertebra, with signs of softening in the lumbar region and to a less extent in the thoracic, with a purulent fluid escaping on transverse section.

68. Polycythemia.—Köster remarks that nearly all the cases of polycythemia known were in middle-aged persons, the youngest was 20 and the oldest 60. He reviews the various cases that have been published and one from his own experience. The etiology see is to be still as obscure as ever, although it is apparent that the cause can not be a single one. The only point firmly established to date is the change in the blood-forming organs, but whether this is primary or secondary is still a mystery. See editorial in THE JOURNAL, Aug. 18, 1906, p. 510.

Hospitalstidende, Copenhagen.

Las indexed, page 158.

69 (XLIX, No. 12.) *Om Fractura olecrani. A. Lendorf.
70 (No. 13.) *Paralyse under Forløbet af kroupös Pneumoni. F. Vogelius.
71 Et Tilfælde af medfødt Kæmpevækst (congenital giant growth). E. Böcher.
72 (No. 14.) *Catgut That Can Be Boiled.—Om Kogecatgut. C. F. Heerfordt.
73 (Nos. 15-16.) Et Tilfælde af Tabes dorsalis og Aortaaneurysme, med Stenose af Trachea, Hæmo-Pneumothorax, Hjertetilfælde og universal Hydrops, etc. Helbredelse Højfebril Hæmothorax). Nordentoft. Recovery.
74 Et Tilfælde af Luxatio traumatica nervi ulnaris. A. Holm.
75 (No. 17.) Tilfælde af rhinogen Pyæmi. S. Bentzen.
76 (No. 18.) *Et Tilfælde af Salpingitis tuberculosa diagnosticeret ved Tuberkulin-Injektion. S. Kemp.
77 *Huntington's Korea. Wimmer.
78 (Nos. 19-20.) *Gastric Ulcer.—Bidrag til Mavesaarets Patologi og Terapi. Det Reichmann'ske Symptom. V. Rubow.
79 Anwendelse af dræbt Kultur til Widal-Reaktion. G. Dreyer. Killed cultures.

69. Fracture of the Olecranon.—The proportion of fractures of the elbow was 103 to 8,650 fractures of all kinds in von Bruns' experience up to 1903. Lendorf has encountered 21 cases in a total of 3,756 fractures. He describes and illustrates the various types, and says that treatment depends on whether the accessory extension apparatus is injured or not. If it is, operative measures are indispensable, and they are not indicated unless this is the case. The state of the accessory stretching apparatus is the key to treatment, and it must be determined as early as possible. When the point of the olecranon is involved in the fracture, and the anamnesis suggests that there was great strain on the muscles, the rupture is generally transverse and extensive. With the usual direct fracture, the diastasis is very large, while it is small if the tendons still hold. The more the upper fragments are fastened in a flexed position, so that they can not slip around from side to side, the greater the probability that the rupture is small. As soon as the local pain has somewhat subsided, sometimes the same day, but usually not for a few days after the accident, the condition of the stretching apparatus can be tested by having the patient extend his arm. This can be done without fear of rupture as the tendon fibers are too strong to tear with this exercise. The arm should be held so that the movements can be done in the horizontal plane. When the arm is extended it can also be ascertained whether or not the patient is able to hold it in the position which allows a weight on the forearm to cause it to bend. This same test is extremely useful in examining a fractured patella. One of his patients with the stumps fully 1 cm. apart was able—a few hours after the accident—to raise his leg while extended. This showed that the accessory stretching apparatus was almost intact—an important guide to treatment and prognosis. This exercise must be done very cautiously, and if it is excessively painful it is best to postpone it, although the results of treatment are better, the earlier it is undertaken. It is not enough to suture the bone, the ruptured tendons must also be sutured. The arm must be immobilized in a flexed position. If operative measures are not required, massage and movements are indispensable. Tilanus massages in all cases, beginning at once after the accident with daily séances, applying a flannel bandage to promote reabsorption of the extravasated blood in and around the joint, and fastening the arm in a splint holding it in extension. Passive bending and stretching of the arm follow and the bandages are discarded after three weeks, when the patient is allowed to use his arm. It is important not to allow active movements before this date. Flexion is more dangerous in all cases as the patient exposes the tendons to injury when he feels pain and strains the triceps. The arm must be held stretched during these first séances.

70. Paralysis During Croupous Pneumonia.—In Vogelius' 2 cases hemiplegia with aphasia developed three days after the crisis of croupous pneumonia in one case, and two days after the onset in the other. Both patients were young men and the paralysis proved permanent. One patient died a few months later of purulent meningitis and pericarditis. The few cases of pneumonic paralysis on record are reviewed and compared. Vogelius' patients were free from syphilis, alcoholism and arteriosclerosis, and had shown no cardiac symptoms. The meningitis was probably a pneumococcus metastasis. The patches of necrosis found in the brain in the case that came to autopsy explain the hemiplegia observed. The same can be said of the muscular atrophy and other changes in the legs in the other patients. Death is the rule in older persons; in the young the paralysis may persist for a long time, but in all the cases previously published complete recovery followed at last. The 2 cases now reported are peculiar on this account as one terminated fatally and there has been little improvement in the paralysis in the other to date. In the 5 fatal cases on record of tardy paralysis after pneumonia, meningomyelitis was found in 2, while there were no signs of it in the others. The trouble is probably the result of the direct action of the pneumococcus toxin on the nervous system, similar to the paralysis after diphtheria.

72. Catgut That Can Be Boiled.—Heerfordt has been trying for years to produce a catgut than can be boiled, like the instruments, just before using. He announced in 1904 that preliminary treatment with formaldehyd rendered the catgut able to resist the action of boiling water. At the same time, however, he stated that there was no certainty as to the sterilization of catgut thus treated, as it lost too much in strength if the process was pushed far enough to ensure sterility. He now

announces that this difficulty can be overcome by using catgut previously sterilized with dry heat or with Claudius' technic of leaving the raw catgut for 8 days in a solution of equal parts iodin and potassium iodid in 100 parts water, or if the catgut is sterilized by leaving for fourteen days in a 2 per cent. solution of carbolic acid, twice changed. The catgut thus sterilized is loosely wound on a frame and left for 24 hours in an aqueous 4 per cent. solution of formaldehyd. The frame with the catgut is then rinsed for a few moments in running water, and then placed for a few hours in a 2 per cent. aqueous solution of ammonia. The catgut is then wound into coils, rinsed in running water for about 24 hours, then placed in the ammonia solution for 8 hours, and rinsed in running water for about 12 hours. It is then carefully dried and wound in coils or on spools, ready to use. It resembles raw catgut in appearance at this stage. Just before using, it is placed in boiling water for from 10 to 20 minutes. The "koge-catgut" (catgut that can be boiled), prepared in this way, has only a very slight irritating action on the tissues, and sometimes none at all. In 12 tests the catgut was introduced into the cornea or into the anterior chamber of rabbits' eyes, and the symptoms of irritation were minimal. In 10 cases there was an insignificant pericorneal congestion, and in the others no symptoms developed indicating any irritation. The catgut was completely absorbed by the end of 2 weeks in every instance. One precaution must always be observed, namely, that the catgut must be taut when it is placed in the boiling water. He has devised a special suture holder for the purpose, which stretches the catgut and prevents its snarling, neither the needle nor the catgut coming in contact with the fingers. When the catgut is lifted out of the boiling water and left exposed to the air for a few moments, the partially dry surface offers an especially favorable consistency for suturing. Catgut thus prepared is in constant use in the ophthalmic clinic at Copenhagen and in Rovsing's hospital and private practice. It is regarded as an important progress both for the hospital surgeon and the general practitioner. Even the finest catgut (OO and OOO) can be threaded dry in a very fine needle, and after both needle and catgut have been boiled, can be used in suturing nerves or blood vessels or in operations on the eyes. Before placing the catgut in the formaldehyd solution mentioned above, if it was sterilized with carbolic acid or with the iodo-iodid solution, these chemicals must be thoroughly removed by soaking the catgut in a 2 per cent. aqueous solution of ammonia for 2 hours and then rinsing thoroughly in running water. Catgut sterilized with dry heat is prepared by soaking for an hour in boiled water. After these preliminaries the sterilized catgut is ready for the formaldehyd mentioned above. Heerfordt would like to have sterile catgut prepared for surgical purposes under state guarantee. He thinks that the importance of the subject and the enormous demand justify something of the kind. It is rarely possible for tests of the sterilization of catgut to be absolutely decisive under present conditions. The real touchstone, that is, the most resistant germs—are seldom procurable.

76. **Tuberculosis of Adnexa Diagnosed with Tuberculin.**—Kemp's patient was a housemaid of 24, scrofulous as a child, but otherwise healthy until abdominal and slight pulmonary symptoms developed, varying in intensity during 3 years, with suppression of the menses for one year, with their reappearance later. Pains in the iliac region, especially on the left side, were frequent, and the girl became much emaciated. The tuberculin test was positive and tuberculous lesions were found in the tubes and one ovary, which were removed, leaving the other ovary. The patient rapidly recovered and no further symptoms have been observed, either from the lungs or abdomen. The case was rendered specially interesting by the lack of any local reaction in the lungs after the injection of tuberculin. This indicated that the lung process had healed, and encouraged operative treatment of the gynecologic tuberculous process. With the exception of the tuberculin reaction, none of the symptoms were pathognomonic of a tuberculous affection. He remarks that the tuberculin test has been applied in gynecology only ten times to date, according to the literature. Bossi, Meyer and Birnbaum used it in 10 cases, with a positive response in 6. Absolutely negative findings indicate the non-tuberculous character of the lesions, or, at least, that they do not require active operative intervention. A positive response without any local reaction also speaks against a gynecologic tuberculous affection.

77. **Huntington's Chorea.**—Wimmer's patient was a 1-para of 47 whose father, twin sister and 2 brothers presented the same syndrome. She had never had acute febrile rheumatism and also denied syphilis. Another patient was a physician 51 years old, who had suffered several times from recurring acute articular rheumatism during the last 10 or 12 years. His father had succumbed to paralytic dementia. Hallucinations in sight and hearing developed three years before the choreic movements were noticed, with obsessions of persecution and depression, and a rapid decline. The pathologic anatomy in this case is described in detail.

78. **Gastric Ulcer.**—Rubow reports 12 cases in all of which hypersecretion of gastric juice coincided with an ulcer. In 3 cases the diagnosis of ulcer was confirmed by an operation, in 4 others by the prompt success of treatment directed against the assumed ulcer, and in the others the history of the case rendered certain an ulcer with stenosis and cancerous degeneration. All these cases confirmed the intimate connection between an ulcer and the gastrosuccorrhea. The latter can be accepted, therefore, as an almost certain sign of ulcer. The finding of 50 c.c. of fluid or more in the fasting stomach in the morning, especially if very acid, is presumptive evidence of an ulcer. It decided the question in several dubious cases in his experience, especially in some in which obstinate constipation or other intestinal affection might have been responsible for the gastric symptoms. An ulcer in cancerous degeneration is liable likely to be accompanied by gastrosuccorrhea if the mucosa is still functionally capable. Madsen has reported 2 cases of cancer of the stomach accompanied by hypersecretion of gastric juice. How frequently it accompanies ulcer is not known, but it is more likely to be observed with the more chronic ulcers rather than in the new-forming ones. Its differential importance may be great, especially in cases in which the diagnosis wavers between ulcer, chronic intestinal trouble and a gallstone affection. In examining for gastrosuccorrhea it must be established that the patient did not drink during the night, and also that the tip of the sound is actually in the lowest part of the stomach, which in case of gastroptosis may be very low.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

OBSTETRICS. Edited by J. B. De Lee, A.M., M.D., Professor of Obstetrics Northwestern University Medical School, with the Collaboration of D. Roehler, M.D., and H. M. Stowe, M.D. Vol. 5 of the Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Series 1906. Cloth. Pp. 256. Chicago: The Year Book Publishers, 1906.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, etc. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, with the Collaboration of W. Osler, M.D., J. H. Musser, M.D., and others. Vol. II. Sixteenth Series, 1906. Cloth. Pp. 302. Price, $2.00 net. Philadelphia: J. B. Lippincott Company, 1906.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By J. J. Reese, M.D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. Seventh edition, Revised by H. Leffmann, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania. Cloth. Pp. 656. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

ELEMENTS OF GENERAL CHEMISTRY, with Experiments, by J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth edition. Revised and Enlarged. Cloth. Pp. 435. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

PHILADELPHIA HOSPITAL REPORTS. Edited by H. B. Allyn, M.D., Vol. VI. 1905. Cloth. Pp. 276. Philadelphia: Bradley Printing Co. 1905.